

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

April 1995

QAD Inc.

CEO: Karl F. Lopker
President: Pamela Meyer Lopker
6450 Via Real
Carpinteria, CA 93013
Phone: (805) 684-6614
Fax: (805) 684-1890

Status:	Private
Employees:	450
Revenue:	\$84,000,000
Fiscal Year End:	12/31/94

Key Points

- QAD Inc. develops, markets and supports integrated manufacturing, distribution and financial applications software.
- MFG/PRO, QAD's application software product, has multi-site, multi-national, multi-currency, and multi-language capabilities and supports process, batch process, repetitive, make-to-stock and configure-to-order manufacturing environments.

- QAD is well positioned to take advantage of the trend toward open systems in the discrete and process manufacturing sectors.
- The company continues to focus on international markets and currently offers QAD products in 23 languages.
- In July 1994, QAD formed a new Japanese subsidiary in an effort to expand its international presence.

Company Description

QAD Inc., founded in 1979, develops, markets and supports integrated manufacturing, distribution, and financial applications software. The company's primary product—MFG/PRO™—is targeted to discrete, assemble-to-order, make-to-stock, repetitive, and process manufacturing environments.

Organization and Structure

Headquartered in Carpinteria (CA), QAD has direct/sales support offices in Atlanta (GA); Boston (MA); Chicago (IL); Dallas and Houston (TX); Grand Rapids (MI); Los Angeles, San Jose and Santa Barbara (CA); Mt. Laurel (NJ); Phoenix (AZ); Portland (OR); and Toronto (Canada).

International direct sales/support offices are in Amsterdam, Berlin, London, Paris, Hong Kong, Sydney, Melbourne and Japan. QAD covers 60 countries with the help of agents and systems integration companies.

In 1994, QAD expanded its international operations by forming a new subsidiary—QAD Japan K.K.—in Yokohama (Japan).

Company Strategy

QAD's principal strategic focus is the penetration of international markets utilizing

a product set that was designed with an open system architecture. This open design has given QAD a lead over competitors that are investing heavily to re-engineer their products.

QAD is expanding rapidly and plans to grow its employee base by about 25% during 1995. Expansions are planned in North America, Asia-Pacific, Europe, Africa and Latin America.

QAD management anticipates its newly formed Japanese subsidiary will contribute approximately \$30 million (20% of total revenue) by 1998.

Financials

QAD's 1994 revenue was approximately \$84 million, a 46% increase from 1993 revenue of \$58 million. A three-year source of summary follows:

QAD Inc.
Three-Year Financial Summary
(\$ Millions, except per share data)

Item	Fiscal Year		
	1994	1993	1992
Revenue	\$84	\$58	\$34
• Percent change from previous year	46%	71%	84%

Revenue Analysis by Product/Service

Approximately 90% of QAD's revenue is derived from applications software products and 10% from associated professional services.

Market Financials

One hundred percent of QAD's revenue is derived from the manufacturing and distribution industries.

Primary businesses in this market include:

- Electronics
- Industrial Products
- Consumer Packaged Goods
- Automotive
- Food and Beverage
- Medical/Pharmaceutical

Geographic Markets

Approximately 55% of QAD's 1994 revenue was derived from North America, 30% from Europe and 15% from the Asia/Pacific region.

Employees

As of December 31, 1994 the company had approximately 450 employees segmented as follows:

Marketing and sales.....	200
Customer support.....	30*
Research and development	150
Computer operations.....	40
General and administrative.....	<u>30</u>
Total.....	450

* In addition, QAD has hundreds of MFG/PRO certified partners that provide customer support.

Key Products and Services

Products

QAD's primary product is the MFG/PRO. It is an integrated manufacturing, distribution, customer service and financial software product that addresses the entire manufacturing spectrum, from repetitive to configure-to-order.

- MFG/PRO is written in the PROGRESS fourth-generation language and is available for ORACLE or PROGRESS relational database system and has a built-in report writer to ease customization.
- The product has multi-site, multi-currency, and multi-language capabilities and supports process, batch process, repetitive, make-to-stock, and configure-to-order manufacturing environments.

- MFG/PRO runs on all operating systems, networks, and hardware supported by PROGRESS.

MFG/PRO is available in modules sold separately or as a complete system as follows:

Base Module:

- Items/Products
- Addresses
- Manager Functions

Distribution Modules:

- Inventory Control
- Lot Traceability/Serial Tracking
- Physical Inventory
- Purchasing
- Sales Orders/Invoices/Analysis
- Sales Quotations
- Features and Options
- Sales Analysis
- Service/Repair Orders

Manufacturing Modules:

- Product Structures
- Routings/Work Centers
- Work Orders
- Shop Floor Control
- Repetitive
- Formula/Process

Planning Modules:

- Product Line Plan
- Resource Plan
- Forecasting
- Master Schedule Plan
- Material Requirements Plan
- Capacity Requirements Plan

Financial Modules:

- General Ledger
- Multiple Currency
- Accounts Receivable
- Accounts Payable
- Payroll
- Cost Simulation

MFG/PRO is compatible with SCO UNIX; PC-MS/DOS; XENIX; DEC VAX/VMS; ULTRIX; HP 9000/HP-UX; NCR Tower; AT&T UNIX System V; IBM RS/6000/AIX; Pyramid; Solbourne; Sequent; Sun and Unisys. QAD has approximately 1,850 units of MFG/PRO installed with customers worldwide, as compared to about 1,350 a year ago.

Support Services

QAD and its distributors provide telephone support for MFG/PRO users. QAD specialists provide consulting services and assistance in the implementation, installation, planning and customization specifications for MFG/PRO.

The company offers training classes that provide an overview of the products. Classes are offered at QAD's regional offices on a regular basis. In addition, the company also provides on-site classes that may be tailored to the specific needs of clients.

Clients

QAD has over 1,900 installations at client sites in 61 countries.

Representative clients include AT&T, Black & Decker, Coca-Cola, Johnson & Johnson, Philips Electronics, Raychem Corporation, Schlumberger and Unilever.

Marketing and Sales

QAD markets its products worldwide, through its direct sales force made up of about 200

employees. In addition, the company serves over 60 countries with the help of distributors, agents and systems integration companies.

QAD's primary channels of distribution include:

- **Americas**—The company has direct sales and support offices in Atlanta, Baltimore, Carpinteria, Chicago, Grand Rapids, Houston, Long Beach, Minneapolis, Mississauga (Canada), Mt. Laurel (NJ) and San Jose. In addition, QAD has distributors in 6 countries.
- **Europe**—Direct sales and support offices are located in Amsterdam, Barcelona, Frankfurt, London, Paris and Sweden. Distributors are based in 33 countries.
- **Asia/Pacific**—QAD has direct sales and support offices in Hong Kong, Shanghai, Singapore, Sydney and Yokohama, and distributors in 12 countries.

Competitors

QAD's major competitors include SAP, MARCAM, Oracle and J.D. Edwards.

INPUT Assessment

QAD's major strengths include:

- Total global supply chain solutions
- Quality product with rich functionality
- High customer acceptance
- High growth rate, year-over-year

Challenges for the company over the coming year include:

- Being able to sustain the growth the company has experienced over recent years

- Bring in management that will grow the company and successfully expand its international operations
- Enhance existing products and introduce new products

QAD, INC

6450 Via Real
Carpinteria, CA 93013
Phone: (805) 684-6614
Fax: (805) 684-1890

President & CEO:	Pamela Lopker
Status:	Private
Total Employees:	215
Total Revenue:	\$35,000,000
Fiscal Year End:	12/31/92

Key Points

- qad.inc, (qad) founded in 1979, develops, markets, and supports integrated manufacturing, distribution, and financial applications software.
- MFG/PRO, qad's application software product, has multisite, multinational, multicurrency, and multilanguage capabilities and supports process, batch process, repetitive, make-to-stock, and configure-to-order manufacturing environments.
- qad is well positioned to take advantage of the trend toward open systems in the discrete and process manufacturing sectors.
- The company continues to focus on international markets, offering qad products in 18 languages.

Company Description

qad.inc, founded in 1979, develops, markets, and supports integrated manufacturing, distribution, and financial applications software. The company's flagship product, MFG/PRO™, is targeted to discrete, assemble-to-order, make-to-stock, repetitive, and process manufacturing environments.

Operations/Structure

In addition to its headquarters in Carpinteria (CA), qad has direct/sales support offices in Atlanta (GA); Boston (MA); Chicago (IL); Dallas and Houston (TX); Grand Rapids (MI); Los Angeles, San Jose, and Santa Barbara (CA); Mt. Laurel (NJ); Phoenix (AZ), Portland (OR); and Toronto (Canada).

In Europe, the company has direct sales/support offices in Amsterdam, Berlin, London, and Paris and distributors in 14 countries.

In the Asia/Pacific, the company has direct sales/support offices in Hong Kong, Sydney, and Melbourne, and distributors in 10 countries.

Strategy

qad's principal strategic focus is the penetration of international markets utilizing a product set that was designed with an open system architecture. This open design has given qad a lead over competitors that are investing heavily to reengineer their products.

Financials

qad's 1992 revenue reached an estimated \$35 million, a 84% increase over estimated 1991 revenue of \$19 million.

Key Products and Services

Approximately 80% of qad's revenue is derived from applications software products and 20% from associated professional services.

MFG/PRO is an integrated manufacturing, distribution, and financial software product that addresses the entire manufacturing spectrum, from repetitive to configure-to-order.

- MFG/PRO is written in the PROGRESS fourth-generation language and relational data base system and has a built-in report writer to ease customization.
- The product has multisite, multinational, multicurrency, and multilanguage capabilities and supports process, batch process,

repetitive, make-to-stock, and configure-to-order manufacturing environments.

- MFG/PRO runs on all operating systems, networks, and hardware supported by PROGRESS. · MFG/PRO is available in modules sold separately or as a complete system as follows:

Base Module:

- Items/Products
- Addresses
- Manager Functions

Distribution Modules:

- Inventory Control
- Lot Traceability/Serial Tracking
- Physical Inventory
- Purchasing
- Sales Orders/Invoices
- Sales Quotations
- Features and Options
- Sales Analysis
- Service/Repair Orders

Manufacturing Modules:

- Product Structures
- Routings/Work Centers
- Work Orders
- Shop Floor Control
- Repetitive
- Formula/Process

Planning Modules:

- Product Line Plan
- Resource Plan
- Forecasting
- Master Schedule Plan
- Material Requirements Plan
- Capacity Requirements Plan

Financial Modules:

- General Ledger
 - Multiple Currency
 - Accounts Receivable
 - Accounts Payable
 - Payroll
 - Cost Simulation
- There are currently over 700 MFG/PRO customers worldwide, compared with 400 customers a year ago.

Support Services

Support services provided by qad include the following:

- Application support includes telephone support for all MFG/PRO users and on-site consulting for implementation, installation, planning, and customization.
- Training includes MFG/PRO classes at quad regional offices, on-site and customized training classes, and PROGRESS training from qad and Progress Software.
- Implementation support includes project management and implementation planning.

Industry Markets

One hundred percent of qad's revenue is derived from the manufacturing industry.

The company has clients in the electronics, machinery, automotive, consumer products, pharmaceutical, and food and beverage industries.

Clients

Representative clients include AT&T, Black & Decker, Johnson & Johnson, and Unilever.

Geographic Markets

Approximately 55% of qad's 1992 revenue is derived from North America and 30% from Europe, and 15% from the Asia Pacific region..

**Platforms
Supported**

MFG/PRO runs on all operating systems, networks, and hardware supported by PROGRESS. Operating systems supported include UNIX, HP-UX, VMS, ULTRIX, and MS-DOS operating systems for over 400 hardware platforms.



QAD, INC

6450 Via Real
Carpinteria, CA 93013
Phone: (805) 684-6614
Fax: (805) 684-1890

President & CEO:	Pamela Lopker
Status:	Private
Total Employees:	180
Total Revenue:	\$19,000,000
Fiscal Year End:	12/31/91

**Company
Description**

qad, inc, founded in 1979, develops, markets, and supports integrated manufacturing, distribution, and financial applications software. The company's flagship product, MFG/PRO[™], is targeted to discrete, assemble-to-order, make-to-stock, repetitive, and process manufacturing environments.

Financials

qad's 1991 revenue reached an estimated \$19 million, a 72% increase over estimated 1990 revenue of \$11 million.

**Key Products and
Services**

Approximately 80% of qad's revenue is derived from applications software products and 20% from associated professional services.

MFG/PRO is an integrated manufacturing, distribution, and financial software product that addresses the entire manufacturing spectrum, from repetitive to configure-to-order.

- MFG/PRO is written in the PROGRESS fourth-generation language and relational data base system and has a built-in report writer to ease customization.
- The product has multisite, multinational, multicurrency, and multilanguage capabilities and supports process, batch process, repetitive, make-to-stock, and configure-to-order manufacturing environments.
- MFG/PRO runs on all operating systems, networks, and hardware supported by PROGRESS. Operating systems supported include UNIX, HP-UX, VMS, ULTRIX, and MS-DOS operating systems for over 400 hardware platforms.

- MFG/PRO is available in modules sold separately or as a complete system as follows:

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- Addresses
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- Physical Inventory
- Purchasing
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Financial Modules:

- General Ledger
- Multiple Currency
- Accounts Receivable
- Accounts Payable
- Payroll
- Cost Simulation

- There are currently over 700 MFG/PRO customers worldwide, compared with 400 customers a year ago.

Support services provided by qad include the following:

- Application support includes telephone support for all MFG/PRO users and on-site consulting for implementation, installation, planning, and customization.
- Training includes MFG/PRO classes at quad regional offices, on-site and customized training classes, and PROGRESS training from qad and Progress Software.
- Implementation support includes project management and implementation planning.

Industry Markets

One hundred percent of qad's revenue is derived from the manufacturing industry.

The company has clients in the electronics, machinery, automotive, consumer products, pharmaceutical, and food and beverage industries.

Geographic Markets

Approximately 60% of qad's revenue is derived from the U.S. and 40% from international sources.

In addition to its headquarters in Carpinteria (CA), qad has direct/sales support offices in Atlanta (GA); Boston (MA); Chicago (IL); Dallas and Houston (TX); Grand Rapids (MI); Los Angeles, San Jose, and Santa Barbara (CA); Mt. Laurel (NJ); Phoenix (AZ), Portland (OR); and Toronto (Canada).

In Europe, the company has direct sales/support offices in Amsterdam, Berlin, London, and Paris and distributors in 14 countries.

In the Asia/Pacific, the company has direct sales/support offices in Hong Kong, Sydney, and Melbourne, and distributors in 10 countries.



Dropped 1/81

COMPANY HIGHLIGHT

GANTEL CORPORATION
3525 Breakwater Avenue
Hayward, CA 94545
(415) 783-3410

Douglas Baker, President
Private company
Computer services employees:
approximately 500
Total revenues, fiscal year end
12/78: \$40 million approximately*,
75% domestic

THE COMPANY

- Gantel, incorporated in 1969, designs, manufactures, and markets small business computer systems.
- Gantel sales have increased approximately 100% per year from \$10 million in fiscal 1976 to \$40 million in fiscal 1978.
- Gantel has pioneered in the business computer market. Its product line sells to small manufacturers and distributors. Most are first time users that have converted from local batch services or computer service bureaus. Over 1,500 systems are installed, and the company is presently shipping more than 100 systems monthly.
- Corporate strategy is to concentrate marketing efforts towards the placement of free standing systems in selected geographic markets, as well as multiple mainframes into a distributed processing network. Network sales account for 10% of installations. This strategy results in concentrations of system population, substantially reducing the cost of providing field maintenance services.
- Gantel markets its products to the end user via a network of agents and distributors. It has no company-owned sales offices.
- Gantel competes primarily with products offered by Basic Four, DEC, IBM, Microdata, Burroughs, and NCR.

KEY PRODUCTS AND SERVICES

- Gantel provides a broad range of systems in three series (210, 900, and 1400 series) which are modular in concept and software compatible. Systems are priced from \$12,000 to \$150,000, with the average system price about \$55,000.

* Management estimate

November 1978

COMPANY HIGHLIGHT/QANTEL CORPORATION

- The hardware available includes processors (from 40K to 1,024K bytes of memory in 16K increments), disk drives (2-75 MB), tape drives, printers (60-600 lpm), 45 cps serial printers, visual display work stations, card readers, and communications capabilities.
- The company provides an assembler, QIC (Qantel Interactive Code, an advanced BASIC language); a source programming language, BEST (Business Executive System for Timesharing); and SOLUTIONS; an applications package covering a number of accounting functions.
- Qantel provides field maintenance for installations in the U.S. Maintenance for overseas systems is handled by the respective international distributor.

APPLICATIONS

- Qantel systems are used in general business applications such as order entry, inventory control, payroll, accounts receivable and payable, and general ledger or financial statements.
- In addition, a growing line of specialized packages services vertical markets, such as manufacturing control, client accounting, and medical clinics.

INDUSTRY MARKETS

- The company utilizes distributors, users' in-house staff, and local software houses to provide the majority of applications programming to its customer base. Qantel provides its distributors with modular software packages for these functions.
- Over 50% of installations are with distribution companies, followed by manufacturing concerns and banks.

GEOGRAPHIC MARKETS

- Qantel markets through distributors or agents in 75 metropolitan areas in the U.S. and overseas: Australia, Canada, The Netherlands, New Zealand, Japan, West Germany, Mexico, Puerto Rico, Spain, and Argentina.
- Approximately 25% of computer installations are on the West Coast; about 20% each in the Northeast/New England, and Midwest/North Central, and 10% in the Southeast. International installations account for about 25% of the total.

(Stan Mankell)

COMPANY HIGHLIGHT

QANTEL CORPORATION
3525 Breakwater Avenue
Hayward, California 94545
(415) 783-3410

✓
Douglas Baker, President
Private company
Computer services employees: approximately 170*
Total revenues, fiscal year end 12/76:
\$10 million approximately*, 90% domestic

78-40M

100% / yr.

COMPANY BACKGROUND:

- Qantel, incorporated in 1969, designs, manufacturers, and markets small business computer systems. Management anticipates that 1976 will be profitable.

OVERALL ASSESSMENT:

- In 1978, the revenue plan calls for sales in excess of \$20 million.
- Qantel has pioneered in the small business computer market. Its product line sells to small manufacturers and distributors. Most are first time users who, more than 75% of the time, have converted from local batch services or computer services. Over 600 systems are installed, and the company is presently shipping over 20 systems monthly.
- Corporate strategy is to concentrate marketing efforts towards the placement of free standing systems in selected geographic markets, rather than multiple mainframes into a distributed processing network. Network sales account for less than 10% of installations. This strategy results in concentrations of system population, substantially reducing the cost of providing field maintenance services.
- Qantel markets its products to the end user via a network of agents and distributors. It has no company-owned sales offices.
- Qantel competes primarily with products offered by Basic Four, DEC, IBM, Microdata, Burroughs, and NCR.

KEY PRODUCTS AND SERVICES:

- Qantel provides systems (#800, #950, #1200, #1300), modular in concept and software compatible. Systems are priced from \$27,000 to \$120,000, with the average system price about \$55,000. The company does not currently offer operating leases.

*Estimate by Qantel Management

COMPANY HIGHLIGHT/QANTEL CORPORATION

- The hardware available includes processors (from 32K to 128K bytes of memory in 8K increments), disk drives (6-150 MB), tape drives, printers (60-600 lpm), 45 cps serial printers, visual display work stations, card readers, and communications capabilities.
- Qantel provides field maintenance for installations in the U.S., whereas maintenance for overseas systems is handled by the local distributor.

APPLICATIONS:

- Qantel systems are used in general business applications such as order entry, inventory control, payroll, accounts receivable and payable, and general ledger or financial statements.
- The company utilizes distributors, the user's in-house staff, or local software houses to provide the majority of applications programming to its customer base.
- The company provides an assembler, QIC (Qantel Interactive Code); a source programming language, BEST (Business Executive System for Timesharing); and SOLUTION, an applications package covering a number of accounting functions.

INDUSTRY MARKETS: Over 50% of installations are with distribution companies, followed by manufacturing concerns and banks.

GEOGRAPHIC MARKETS:

- Qantel markets through distributors or agents in the following geographic areas in the U.S.: Alabama, Arizona, California, Colorado, Florida, Georgia, Illinois, Iowa, Massachusetts, Michigan, Missouri, Minnesota, New York, New Hampshire, Nebraska, Ohio, Oklahoma, Pennsylvania, Texas, Washington, Wisconsin; and overseas: Australia, Belgium, Canada, the Netherlands, New Zealand, Japan, and West Germany.
- Thirty percent of computer installations are on the West Coast; about 20% each in the Northeast/New England, Southeast, and Midwest/ North Central. International accounts for about 10%.

COMPANY PROFILE

QUADRATRON SYSTEMS, INC.

141 Triunfo Canyon Road
Westlake Village, CA 91361
(805) 494-1158

Karl K. Klessig, President and CEO
Private Corporation
Total Employees: 110
Total Revenue, Fiscal Year End
3/31/89: \$11,500,000

The Company

Quadratron Systems, Inc., incorporated in April 1983, provides general business application software products to clients across industries.

As of March 31, 1989, Quadratron Systems had approximately 110 employees worldwide segmented as follows:

Marketing and sales	15
Research and development	25
Computer operations	10
Software services/customer support	35
General and administrative	<u>25</u>
	110

Competitors include DEC, Data General, and Wang.

Key Products and Services

One hundred percent of Quadratron System's fiscal 1989 revenue was derived from business application software products.

Q-ONE, introduced in December 1983, is a menu-driven, function-key-oriented word processing product.

- Features of the package include records processing, spelling correction (using a 90,000 word dictionary), file conversions, automatic table of contents and index generators, printer control menus, one-time set-up for printing and archiving via menus, and proprietary termcap and printcap files.
- The Q-ONE editor allows for creation and manipulation of ASCII or formatted document files.
- Commands are executed using function keys or control key sequences. Special character attributes are available, including bold, underline, and overstrike.

- By using windows, multiple files can be edited simultaneously, and text can be moved and copied between documents without exiting the editor. Other functions, such as spelling checker and automatic hyphenation and pagination can also be run directly from the document or by going out of the editor to the appropriate menu.
- OEM pricing for Q-ONE ranges from \$495 for PC versions to \$10,000 for mainframe versions.

Q-OFFICE, introduced in January 1984, is an office automation product consisting of eight modules. Previously sold as individual software packages, these modules are now available only as an integrated system, with the exception of Q-ONE, which is still sold separately.

- Q-OFFICE modules include:
 - Q-ONE, Quadratron's word processing package.
 - Q-DATE, a three display year calendar/scheduler, designed for single users as well as departments and companies.
 - Q-NOTE, a notepad/index program for storing, retrieving, sorting, and cross-referencing user-generated information.
 - Q-CALL, which stores and maintains phone directories for individuals, departments, and companies. Q-CALL allows users to include addresses and other details about the listing.
 - Q-FORM, which allows novice users to design, fill in, print, and file any type of form.
 - Q-MATH, a desktop calculator that performs simple or complex arithmetic calculations. As operations are performed, they are displayed via an on-screen "tape" which can be stored on a permanent file and integrated with other Q-OFFICE products, such as Q-ONE and Q-NOTE.
 - Q-MAIL, an electronic mail facility that allows the user to maintain and send notes, documents, or external files to various locations on a single system or across multiple systems.
 - Q-MENU, a menu utility. The program permits any application software product, regardless of the source language or operating system, to be executed from these menus.

- Q-OFFICE pricing ranges from \$895 for PC versions to \$34,000 for mainframe versions.

Q-PLAN, introduced in July 1985, is Quadratron's spreadsheet package. Q-PLAN was designed to support a variety of video attributes and business graphics, as well as variable-width columns and multi-windowing.

- Q-PLAN allows the import and export of data from external programs, such as Q-ONE.
- Q-PLAN pricing ranges from \$395 for PC versions to \$8,000 for mainframe versions.

Q-CHART, introduced in July 1985, is a chart drawing program that allows users to represent data in predefined graphic formats, such as bar and pie charts.

- Q-CHART is specifically designed to accept data from various application software packages, including Q-OFFICE.
- Users can generate hardcopy versions using a variety of printers and plotters.
- Q-CHART pricing ranges from \$325 for PC versions to \$7,000 for mainframe versions.

Quadratron's software packages are written in C and run under VMS, UNIX, XENIX, MS-DOS, and PC-DOS operating systems on DEC, IBM, NCR, Apple, Zilog, and other UNIX-based and MS-DOS-based hardware. Quadratron's products normally operate in environments running more than one type of computer system.

Industry Markets

Approximately 35% of Quadratron's products are sold through OEM agreements. Quadratron has OEM distribution agreements with approximately 40 hardware manufacturers including Artecon, Fujitsu, General Automation, Gold Star, Gould, IBC, ITT, Incomnet, Motorola, NCR, Nixdorf, Northern Telecom, Plexus, Bull, Olivetti, Siemens, NEC, Encore, Unisys, and Xerox.

- Quadratron has over 500 VARs and VADs marketing their products, as well as a direct corporate sales program.

Quadratron's software products are used by all industries.

**Geographic
Markets**

Approximately 50% of Quadratron's fiscal 1989 revenue was derived from the U.S. The remaining 50% was derived from foreign sources.

Quadratron has branch offices in Zurich, Switzerland; London, England; Montreal, Canada; Paris, France; Cologne, West Germany; Stockholm, Sweden; and Sydney, Australia.

**Computer
Hardware**

Quadratron has over 120 multiuser computers operating on multiple network environments installed for research and development and customer support.

COMPANY PROFILE

QUADRATRON SYSTEMS, INC.
15260 Ventura Boulevard
18th Floor
Sherman Oaks, CA 91403
(818) 789-8588

John J. Theiss, President and CEO
Private Corporation
Total Employees: 100
Total Revenue, Fiscal Year End
3/31/86: \$10,000,000*

THE COMPANY

- Quadratron Systems, Inc., incorporated in April 1983, provides general business application software products to clients across industries. The company sells its products exclusively through hardware manufacturers.
- As of March 31, 1986, Quadratron Systems had approximately 100 employees worldwide, segmented as follows:

Marketing/sales	10
Research and development	20
Computer operations	20
Software services/customer support	25
General and administrative	<u>25</u>
	100

- Competitors include Data General and Wang.

KEY PRODUCTS AND SERVICES

- One hundred percent of Quadratron Systems' fiscal 1986 revenue was derived from business application software products.
- Q-ONE, introduced in December 1983, is a menu-driven, function-key-oriented word processing product.
 - Features of the package include records processing, spelling corrector (using a 90,000 word dictionary), file conversions, automatic table of contents and index generators, printer control menus, one time set-up for printing and archiving via menus, and proprietary termcap and printcap files.
 - The Q-ONE editor allows for creation and manipulation of ASCII or formatted document files.
 - Commands are executed using function keys or control key sequences. Special character attributes are available, including bold, underline, and overstrike.

*INPUT estimate

- By using windows, multiple files can be edited simultaneously, and text can be moved and copied between documents without exiting the editor. Other functions, such as spelling checker and automatic hyphenation and pagination can also be run directly from the document or by going out of the editor to the appropriate menu.
- OEM pricing for Q-ONE ranges from \$495 for PC versions to \$10,000 for mainframe versions.
- Q-OFFICE, introduced in January 1984, is an office automation product consisting of eight modules. Previously sold as individual software packages, these modules are now available only as an integrated system, with the exception of Q-ONE which is still sold separately.
 - Q-OFFICE modules include:
 - Q-ONE, Quadratron's word processing package.
 - Q-DATE, a three display year calendar/scheduler, designed for single users as well as departments and companies.
 - Q-NOTE, a notepad/index program for storing, retrieving, sorting, and cross-referencing user-generated information.
 - Q-CALL, which stores and maintains phone directories for individuals, departments, and companies. Q-CALL allows users to include addresses and other details about the listing.
 - Q-FORM, which allows novice users to design, fill in, print, and file any type of form.
 - Q-MATH, a desktop calculator that performs simple or complex arithmetic calculations. As operations are performed, they are displayed via an on-screen "tape" which can be stored on a permanent file and integrated with other Q-OFFICE products, such as Q-ONE and Q-NOTE.
 - Q-MAIL, an electronic mail facility that allows the user to maintain and send notes, documents, or external files to various locations on a single system or across multiple systems.
 - Q-MENU, a menu utility. The program permits any application software product, regardless of the source language or operating system, to be executed from these menus.
 - Q-OFFICE pricing ranges from \$1,520 for PC versions to \$34,000 for mainframe versions.
- Q-PLAN, introduced in July 1985, is Quadratron's spreadsheet package. Q-PLAN was designed to support a variety of video attributes and business graphics, as well as variable width columns and multi-windowing.

- Q-PLAN allows the import and export of data from external programs, such as Q-ONE.
- Q-PLAN pricing ranges from \$395 for PC versions to \$8,000 for mainframe versions.
- Q-CHART, introduced in July 1985, is a chart drawing program that allows users to represent data in predefined graphic formats, such as bar and pie charts.
 - Q-CHART is specifically designed to accept data from various application software packages, including Q-OFFICE.
 - Users can generate hardcopy versions using a variety of printers and plotters.
 - Q-CHART pricing ranges from \$325 for PC versions to \$7,000 for mainframe versions.
- Q-FILE, also introduced in July 1985, is a text management system.
 - Q-FILE works on all information that is contained in a system including letters, reports, memos, briefs, proposals, mail, articles, financial information, and data bases.
 - Q-FILE pricing ranges from \$495 for PC versions to \$10,000 for mainframe versions.
- Quadratron's software packages are written in the "C" language and run under VMS, UNIX, XENIX, MS-DOS, and PC-DOS operating systems on DEC, IBM, NCR, Apple, Zilog, and other UNIX-based and MS-DOS-based hardware. Quadratron's products can operate in environments running more than one type of computer system.

INDUSTRY MARKETS

- One hundred percent of Quadratron's products are sold through OEM agreements. Quadratron has OEM distribution agreements with approximately 60 hardware manufacturers including Artecon, Burroughs, Charles River Data, Concept Technologies, Data Media, Essex Office Systems, Fujitsu, General Automation, Gold Star Semiconductor, Gould, IBC, ITT, Incomnet, Motorola, NCR-Europe, Nixdorf, Northern Telecom, Plexus, Sperry, and Xerox.
- Quadratron's software products are used by all industries.

GEOGRAPHIC MARKETS

- Approximately 80% of Quadratron's fiscal 1986 revenue was derived from the U.S. The remaining 20% was derived from foreign sources.

- Quadratron has branch offices in Zurich, Switzerland; London, England; Montreal, Canada; and Sydney, Australia.

COMPUTER HARDWARE

- Quadratron has a variety of computers installed for research and development and customer support.

COMPANY PROFILE

QUADRATRON SYSTEMS, INC.
15260 Ventura Boulevard
18th Floor
Sherman Oaks, CA 91403
(818) 789-8588

John J. Theiss, President and CEO
Private Corporation
Total Employees: 100
Total Revenue, Fiscal Year End
3/31/86: \$10,000,000*

THE COMPANY

- Quadratron Systems, Inc., incorporated in April 1983, provides general business application software products to clients across industries. The company sells its products exclusively through hardware manufacturers.
- As of March 31, 1986, Quadratron Systems had approximately 100 employees worldwide, segmented as follows:

Marketing/sales	10
Research and development	20
Computer operations	20
Software services/customer support	25
General and administrative	<u>25</u>
	100

- Competitors include Data General and Wang.

KEY PRODUCTS AND SERVICES

- One hundred percent of Quadratron Systems' fiscal 1986 revenue was derived from business application software products.
- Q-ONE, introduced in December 1983, is a menu-driven, function-key-oriented word processing product.
 - Features of the package include records processing, spelling corrector (using a 90,000 word dictionary), file conversions, automatic table of contents and index generators, printer control menus, one time set-up for printing and archiving via menus, and proprietary termcap and printcap files.
 - The Q-ONE editor allows for creation and manipulation of ASCII or formatted document files.
 - Commands are executed using function keys or control key sequences. Special character attributes are available, including bold, underline, and overstrike.

*INPUT estimate

- By using windows, multiple files can be edited simultaneously, and text can be moved and copied between documents without exiting the editor. Other functions, such as spelling checker and automatic hyphenation and pagination can also be run directly from the document or by going out of the editor to the appropriate menu.
- OEM pricing for Q-ONE ranges from \$495 for PC versions to \$10,000 for mainframe versions.
- Q-OFFICE, introduced in January 1984, is an office automation product consisting of eight modules. Previously sold as individual software packages, these modules are now available only as an integrated system, with the exception of Q-ONE which is still sold separately.
 - Q-OFFICE modules include:
 - Q-ONE, Quadratron's word processing package.
 - Q-DATE, a three display year calendar/scheduler, designed for single users as well as departments and companies.
 - Q-NOTE, a notepad/index program for storing, retrieving, sorting, and cross-referencing user-generated information.
 - Q-CALL, which stores and maintains phone directories for individuals, departments, and companies. Q-CALL allows users to include addresses and other details about the listing.
 - Q-FORM, which allows novice users to design, fill in, print, and file any type of form.
 - Q-MATH, a desktop calculator that performs simple or complex arithmetic calculations. As operations are performed, they are displayed via an on-screen "tape" which can be stored on a permanent file and integrated with other Q-OFFICE products, such as Q-ONE and Q-NOTE.
 - Q-MAIL, an electronic mail facility that allows the user to maintain and send notes, documents, or external files to various locations on a single system or across multiple systems.
 - Q-MENU, a menu utility. The program permits any application software product, regardless of the source language or operating system, to be executed from these menus.
 - Q-OFFICE pricing ranges from \$1,520 for PC versions to \$34,000 for mainframe versions.
- Q-PLAN, introduced in July 1985, is Quadratron's spreadsheet package. Q-PLAN was designed to support a variety of video attributes and business graphics, as well as variable width columns and multi-windowing.

- Q-PLAN allows the import and export of data from external programs, such as Q-ONE.
- Q-PLAN pricing ranges from \$395 for PC versions to \$8,000 for mainframe versions.
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COMPUTER HARDWARE

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COMPANY BRIEF

Primary Industry-Specific Market: Banking and Finance

Quadstar Corporation
5220 Spring Valley Road
Dallas, TX 75240
(214) 980-9601

CEO: Jack Scott, President
Subsidiary of: Citicorp
Founded: 1976

Employees: 88 (10/86)
Revenue (FYE 12/31/85): \$6 million*

The Company: Quadstar Corporation provides transaction switching and processing systems to providers of financial services

Sources of Revenue:

- Application Software (100%)

Key Products:

- Application Software Products
 - Q-UP is a modular transaction processing system, which allows functions to be added as banking services expand. Q-UP runs on a variety of processors including IBM PCs, minicomputers, mainframes, and Stratus VOS-compatible superminicomputers (such as the IBM System/88). Modules include:
 - Primary EFT software module for transaction switching and processing.
 - EFT software modules for transaction authorization, host computer and interchange connections, automatic teller machine management, and point-of-sale terminal management.
 - In 1986, the company introduced a new application product, Q-SWITCH, that links incompatible hosts together. The software can be used when two financial institutions combine their systems as a result of an acquisition or merger.

Target Industries:

- Financial services (100%)

Geographic Markets:

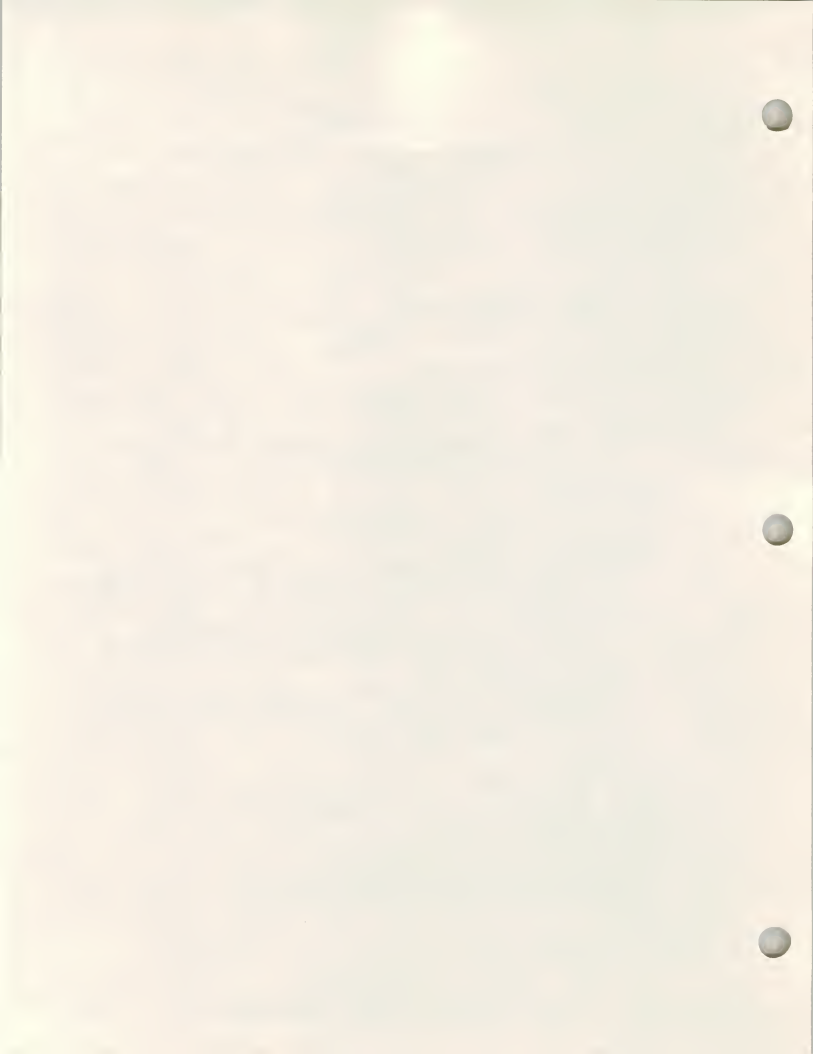
- U.S. and Non-U.S.

Significant Events:

- In 1986, Quadstar introduced a new product, a data encryption module, that incorporates software and hardware developed by the company.

*INPUT estimate

October 1986



Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

April 1996

QUALCOMM Incorporated

Chairman & CEO: Irwin Mark Jacobs
President: Harvey P. White
6455 Lusk Boulevard
San Diego, CA 92121-2779
Phone: (619) 587-1121
Fax: (619) 587-8276
Internet: [Http://www.qualcomm.com](http://www.qualcomm.com)

Status:	Public
Employees:	3,167 (9/95)
Revenue:	\$386,612,000
Fiscal Year End:	9/24/95

Key Points

- QUALCOMM is a leader in digital wireless communications technologies.
- During the second quarter of fiscal 1996, the FCC issued a license to Globalstar L.P., a joint venture between QUALCOMM, Loral, and other companies, to construct, launch, and operate a low-earth-orbit (LEO) satellite system.
- In January 1996, QUALCOMM and SONY Electronic began to jointly market and sell

wireless CDMA portable phones in the U.S. This agreement is intended to leverage QUALCOMM's technology and SONY's consumer product expertise.

- In December 1995, QUALCOMM signed its first Globalstar handset licensee, Orbitel Limited Communications, to design, develop, manufacture, and sell dual-mode Globalstar/GSM user terminals.

Company Description

QUALCOMM develops, manufactures, markets, licenses, and operates advanced communications systems and products based on digital wireless technologies.

QUALCOMM's principal product areas include the OmniTRACS® system, Code

Division Multiple Access (CDMA) wireless communications systems and products, and, through a joint venture, the development of the Globalstar™ low-earth-orbit (LEO) satellite communications system.

The OmniTRACS system is a two-way mobile satellite communications and tracking system that provides messaging, position reporting, and other services for transportation companies and other mobile and fixed-site customers.

QUALCOMM has developed a proprietary application of CDMA technology for use in mobile and fixed wireless communications systems.

- The company develops, licenses, and manufactures products incorporating its CDMA technology for wireless applications, including the cellular, personal communications services (PCS), and wireless local loop (WLL) markets. CDMA provides greater capacity, improved quality and reliability compared to existing analog cellular systems.
- In 1993, the Telecommunications Industry Association adopted a North American interim standard (IS-95) for cellular telecommunications based on QUALCOMM's CDMA technology. In 1995, the company's CDMA technology was selected as a U.S. digital cellular standard.
- QUALCOMM's CDMA technology has been chosen for commercial implementation in the U.S., Canada, Korea, Hong Kong, Singapore, and the Philippines.
- The first commercial system for the cellular market began operation in Hong Kong in the fall of 1995. Commercial systems in the U.S. cellular market are expected to begin operation in 1996, and the first WLL and

PCS commercial systems are expected to begin operation in late 1996.

The company also develops various advanced digital communications products and services, ranging from high-definition television (HDTV) signal processing components and very large-scale integrated (VLSI) circuits to military airborne communications systems, low-earth-orbit (LEO), and geostationary satellite communications systems.

QUALCOMM was founded in July 1985, and became a public company in December 1991.

Organization and Structure

QUALCOMM is organized into four primary business divisions:

- OmniTRACS Division
- CDMA Wireless Communications Division
- Communications Systems Division
- Technology Transfer and Strategic Alliances Division

In addition to its headquarters in San Diego (CA), the company has domestic offices in Boulder (CO), Irving (TX), Kansas City (MO), Las Vegas (NV), Norcross (GA), Salt Lake City (UT), Sewickley (PA), and Washington D.C.

International offices are located in Beijing (China), Buenos Aires (Argentina), Haifa (Israel), and New Delhi (India).

In September 1995, QUALCOMM formed a subsidiary in Sao Paulo (Brazil) to promote the implementation of QUALCOMM's CDMA technology, and to help position the company as a future supplier of wireless infrastructure and subscriber products to South America.

QUALCOMM also has investments in several joint ventures, as described in the Alliances section:

- ALCATEL QUALCOMM, S.A.
- Globalstar L.P.
- Loral QUALCOMM Partnership, L.P.
- QUALCOMM Personal Electronics
- Entel Telefonía Movil S.A.
- Shinsegi Mobil Communications Co., Ltd.

Company Strategy

QUALCOMM's strategy is to be a leading provider of digital wireless communications products and services through innovative systems using its CDMA technology. Specific digital wireless communications products and services include digital cellular telephone service, personal communications services (PCS), wireless local loop (WLL), data services, wireless PBX systems, and satellite-based voice and data communications serving broad geographic areas.

Elements of QUALCOMM's strategy include:

- Focusing on core technologies—QUALCOMM continues to place a strong emphasis on obtaining U.S. and foreign patents and other protection for its technology. Its issued patents provide broad coverage for the OmniTRACS system and many digital wireless applications of CDMA, including satellite, cellular, cordless telephone, PCS, wireless PBX, and WLL applications. QUALCOMM is actively pursuing the international WLL, cellular, and PCS markets.
- Leveraging industry partnerships—QUALCOMM continues to establish industry partnerships with domestic and international communications companies, and contracts with commercial and government entities to help QUALCOMM

define, fund, and validate new products and services.

- Engaging in product manufacturing and marketing—QUALCOMM manufactures its own products and components in order to facilitate time-to-market and provide a basis for further technology innovations. The company also markets its own products and components in order to benefit financially from direct sales and service.
- Establishing a global presence—QUALCOMM forms strategic alliances with major telecommunications companies possessing significant international presence and with entities that have significant presence in specific markets.
- The company also plans to continue to make substantial investments in research and development related to the development of CDMA products for cellular, PCS, and WLL applications.

Financials

Fiscal 1995 revenue was \$386.6 million, an increase of 42% over fiscal 1994 revenue of \$271.6 million. Net income was \$30.2 million in fiscal 1995, a 99% increase over net income of \$15.2 million during the previous year.

A five-year financial summary is shown on the following page.

Revenue growth was attributed primarily to the following:

- Increases in contract services revenue from QUALCOMM's development agreement with Globalstar L.P.
- Increased sales of OmniTRACS products and services

- Higher license and development fees related to additional CDMA licensing and CDMA component sales

Research and development costs were \$80.2 million (21% of revenue) in fiscal 1995, compared to \$23.7 million (9% of revenue) in fiscal 1994.

- Increases were attributed to increased efforts toward the development of commercial CDMA network and subscriber equipment, continued OmniTRACS product development, and QuSAT hub and terminal development.

QUALCOMM Incorporated
Five-Year Financial Summary
(\$ Millions, except per-share data)

Item	Fiscal Year				
	9/95	9/94	9/93	9/92	9/91
Revenue	\$386.6	\$271.6	\$168.7	\$107.5	\$89.9
• Percent change from previous year	42%	61%	57%	20%	93%
Income (loss) before taxes	\$39.9	\$17.3	\$13.1	\$(3.5)	\$(8.3)
• Percent change from previous year	131%	32%	474%	60%	51%
Net income (loss)	\$30.2	15.2	\$12.1	\$(4.1)	\$(8.4)
• Percent change from previous year	99%	26%	395%	51%	51%
Earnings (loss) per share	0.53	0.28	\$0.25	\$(0.10)	\$(0.27)
• Percent change from previous year	89%	12%	350%	60%	54%

Revenue Analysis by Product/Service

Communications systems revenue was \$247.0 million in fiscal 1995, a 27% increase over revenue of \$194.0 during fiscal 1994. Contract services revenue rose 97%, to \$95.2 million, from \$48.3 million in fiscal 1994. License and development fees for fiscal 1995 grew to \$44.5 million, a 52% increase over fiscal 1994 revenue of \$29.3 million.

A three-year source of revenue summary is shown on the following page.

- Communications systems revenue is derived primarily from the sale of OmniTRACS

products and services, CDMA subscriber equipment, and VLSI chips to the telecommunications market.

- Communications systems revenue growth is attributed to higher messaging revenue due to the expansion of the installed OmniTRACS base, growth in OmniTRACS international shipments, and sales of chips to CDMA licensees.
- Contract services revenue growth resulted primarily from the development agreement with Globalstar L.P.

Management attributes license and development fee increases primarily to a

number of new CDMA license agreements signed in fiscal 1995.

QUALCOMM Incorporated
Three-Year Source of Revenue Summary
 (\$ Millions)

	Fiscal Year					
	9/95		9/94		9/93	
Product/Service	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Communications systems	\$247.0	64%	\$194.0	71%	\$123.8	73%
License and development fees	44.5	11%	29.3	11%	16.3	10%
Contract services	95.1	25%	48.3	18%	28.6	17%
Total	\$386.6	100%	\$271.6	100%	\$168.7	100%

Interim Results

Revenue for the three-month period ending December 31, 1995 was \$146.6 million, an increase of 93% over revenue of \$75.9 million during the same period the previous year. Net income rose to \$10.1 million during the period, a 70% increase over net income of \$6.0 million during the same period the previous year.

Revenue growth was attributed primarily to growth in CDMA product revenue, higher license and development fees, increased contract services revenue from QUALCOMM's development agreement with Globalstar L.P., and increased sales of OmniTRACS products and services.

- Communications systems revenue, primarily from OmniTRACS system sales, CDMA subscriber and infrastructure equipment sales, and ASIC sales to CDMA licensees and service providers, was \$88.7 million, an increase of 76% over the same period the prior year.

- Contract services revenue was \$32.2 million (22% of total revenue), compared to \$18.1 million (24% of total revenue) during the same period in 1994. The \$14.1 million increase was almost entirely from growth in the development agreement with Globalstar L.P.
- License and development fees for the three-month period rose to \$25.7 million from \$7.5 million during the corresponding period the previous year, primarily from increased CDMA technology licensing and development fees.

Market Financials

QUALCOMM's OmniTRACS customers in North America are primarily in the long-haul trucking industry and use the system for two-way messaging and position tracking. Domestic revenue from OmniTRACS is from the sale of terminals and related application software packages, and from providing ongoing messaging and maintenance services to OmniTRACS users.

Internationally, revenue from OmniTRACS includes license fees, sales of network equipment and terminals, and fees from engineering support services. Messaging services are provided by service providers that operate network management centers for a region, under licenses granted by QUALCOMM.

Revenue derived from the company's proprietary CDMA technology has traditionally been from license and development fees and contract agreements with domestic and international wireless communications equipment suppliers, service providers, and research organizations.

Since fiscal 1994, limited revenue has been recognized from the sales of demonstration systems to telecommunications authorities and companies. During fiscal 1995 and the first quarter of fiscal 1996, increased CDMA component and equipment sales has occurred.

In the future, QUALCOMM expects to derive increased revenue from the sale of CDMA subscriber and network equipment manufactured by the company, the sale of CDMA chip sets and test equipment to licensees, and additional license fees from royalties from sales of CDMA equipment.

Geographic Markets

Revenue from international customers, exclusive of revenue from the ALCATEL QUALCOMM S.A. joint venture that sells OmniTRACS products in Europe, was approximately \$65.7 million (17% of total revenue) in fiscal 1995, \$54.3 million (20% of revenue) in fiscal 1994, and \$33.3 million (20% of revenue) in fiscal 1993.

A three-year geographic source of revenue summary is shown below.

QUALCOMM Incorporated
Three-Year Geographic Source of Revenue Summary
 (\$ Millions)

Geographic Market	Fiscal Year					
	9/95		9/94		9/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
U.S. (a)	\$320.9	83%	\$217.4	80%	\$135.4	80%
Asia	43.0	11%	33.3	12%	23.8	14%
Canada	12.7	3%	13.6	5%	4.9	3%
Latin America	10.0	3%	7.3	3%	4.6	3%
Total	\$386.6	100%	\$271.6	100%	\$168.7	100%

(a) Includes revenue of \$12.5 million, \$8.4 million, and \$10.4 million in sales to ALCATEL QUALCOMM, S.A. in fiscal years 1995, 1994, and 1993, respectively.

Acquisitions

In January 1996, QUALCOMM acquired Indianapolis-based McCormick & Associates, a major developer of software products for the transportation industry. This acquisition brings key assets to the OmniTRACS division's existing library of AS/400-based business systems software and integrated applications, including an interface with satellite-based mobile communications systems.

Employees

As of September 24, 1995, QUALCOMM had approximately 3,167 employees, segmented as follows:

Engineering and engineering support	44%
Manufacturing	29%
Sales and marketing	7%
Service center support	13%
General and administrative	<u>7%</u>
	100%

Key Products and Services

QUALCOMM offers products and services in four areas—CDMA digital technology, OmniTRACS systems, Eudora® electronic mail, and communications systems.

CDMA Digital Technology

QUALCOMM's CDMA technology competes primarily with U.S. Time Division Multiple Access (TDMA) and Global Systems for Mobile (GSM)-based communications systems to implement digital wireless communications in the cellular, PCS, and WLL markets. The company's CDMA technology provides improved voice quality and increases capacity by 10 to 20 times in current FM analog cellular systems.

The company provides CDMA products and systems in three categories—infrastructure

products, subscriber products, and CDMA ASICs.

- Infrastructure products—QUALCOMM is developing, marketing, and manufacturing CDMA cellular, PCS, and WLL infrastructure product lines that provide a complete turnkey solution that is switch independent. These products allow communication between mobile equipment elements within the system, using Asynchronous Transfer Mode (ATM)-based switching with communication to existing wireline networks.
 - QCS-800 product line—for use by cellular service providers in new systems or migrations from existing wireless networks to CDMA
 - QCS-2000—for PCS applications
 - QCTel—for the WLL market, primarily outside the U.S.
- In February 1996, the company announced that it would supply Northern Telecom (Nortel) with 1900 MHz digital infrastructure equipment and RF services as part of Nortel's award by Sprint Telecommunications Venture.
- Subscriber products—QUALCOMM's digital phones provide high-quality CDMA performance for cellular, PCS, and WLL. As the infrastructure is extended, these phones will support many enhanced features, including caller identification, voice-mail notification, circuit and packet-switched data communications, facsimile, advanced paging, simultaneous voice/data transmission, short message services, and over-the-air activation.
 - PureVoice™—voice coding enhancement for use in all of the company's wireless

communications applications, including cellular, PCS, and WLL

- QCP-800—a dual-mode (analog/CDMA) portable telephone for cellular users
- QCP-1900—a portable phone for PCS users
- QCP-900—a 900 MHz dual-mode digital cellular phone that will operate in both CDMA and TACS modes. This product will be marketed in the PRC and Hong Kong.
- QCT-6000—a full-featured system for WLL applications, including voice, fax, and data capabilities for use in business settings
- QCT-1000—subscriber equipment for WLL applications and residential or economical small business use. Production of QCT-1000 began in January 1996.
- QCT-8000 Concentrated Subscriber System—to provide low-cost wireless communications to users within a cluster
- CDMA ASICs—QUALCOMM designs its chips for increased functionality with fewer components, reducing the size and overall cost of the manufactured product. These chips are incorporated into the company's own subscriber and infrastructure equipment, and are also sold to OEMs.
- Mobile Station Modem—QUALCOMM's third-generation subscriber chip with cost, space, and power reduction

OmniTRACS Systems

QUALCOMM's OmniTRACS communications system is a wireless system that provides transportation companies with two-way data

messaging and position reporting services via geosynchronous satellites.

- The OmniTRACS system currently operates in the U.S., Canada, Europe, Japan, Malaysia, and Mexico on leased commercial Ku-band or C-band satellite transponders.
- In February 1996, QUALCOMM signed an agreement with Samsung America, Inc. whereby Samsung is to be the exclusive distributor of OmniTRACS systems in Korea. Implementation has begun and completion is expected by mid-1996.
- The OmniTRACS system also supports the use of the U.S. government-funded Global Positioning System for position reporting for systems in the U.S., Japan, Mexico, Malaysia, and Brazil.
- OmniTRACS-related products and services accounted for approximately 55% of the company's total revenue in fiscal 1995. To date, the company has shipped more than 147,000 OmniTRACS units worldwide.
- The OmniTRACS system allows users to monitor the en-route location of their entire fleet through mobile terminals consisting of a keyboard display, a transceiver, and an antenna. Messages and position reports are communicated from the mobile units via satellite to the system hub or network management center.
- QUALCOMM offers complementary software products and services to enhance the functionality of the OmniTRACS system and to increase messaging unit volume.
- SensorTRACS—for on-board trip recording
- JTRACS—for vehicle diagnostics reporting

- TrailerTRACS—for trailer identification and load status
- QTRACS—for message formatting, tracking, and display
- QUALCOMM Decision Support System—for operating efficiency and fleet optimization
- ETA Out-of-Route—provides out-of-route and ETA information
- Business Applications—for dispatch and other operational systems

Eudora Electronic Mail

Through its QUALCOMM Enterprise Software Technologies (QUEST) Group, QUALCOMM provides Macintosh, Newton, and Windows versions of its Internet-based electronic mail software in commercial and freeware versions.

- Eudora Pro—QUALCOMM's commercial version provides advanced messaging capabilities and includes spell checking, user-definable message filtering, native 32-bit support for Windows 95 and Windows NT, MAPI support, and "hot link" Web page capabilities to allow users to navigate the World Wide Web
- Eudora Light—QUALCOMM's entry-level E-mail, provided free on the Internet. In November 1995, the company released the Eudora Light for the Apple MessagePad.
- In February 1996, QUALCOMM entered into a licensing agreement with IBM to distribute Eudora Light software as part of an IBM Global Network total package of Internet-based service offerings. This supports QUALCOMM's commitment to promote open communications and multiple clients.

Communications Systems

QUALCOMM develops, manufactures, markets, and distributes communications systems and components for use in a variety of applications. These components and systems range from VLSI circuits and HDTV signal processing components to military airborne communications systems and low-earth-orbit and geostationary satellite communications systems.

- Globalstar—Low-earth-orbiting (LEO) satellite communications system being designed and constructed by Globalstar L.P., a joint venture between QUALCOMM, Loral, and other companies
 - The Globalstar system is to be a worldwide, LEO satellite-based digital telecommunications system using QUALCOMM's CDMA technology.
 - The network of 48 satellites will give fixed and mobile users access to the information highway for voice and data via hand held telephones.
 - Globalstar is intended to offer low-cost, high-quality voice telephony and other digital telecommunications services such as data transmission, paging, facsimile, and position location to areas currently under-served or not served by existing wireline and cellular telecommunications systems.
 - In December 1995, QUALCOMM signed its first Globalstar handset licensee, Orbitel Limited Communications, to design, develop, manufacture, and sell dual-mode Globalstar/GSM user terminals.
- QuSAT—ultra-small aperture satellite terminals for transaction-based data applications and voice communications from

fixed sites, using an OmniTRACS/CDMA hybrid technology. The QuSAT system is a hub-based system being designed for use in transaction-based data exchanges, including point-of-sale and credit authorization transactions, electronic funds transfer, database inquiry response, E-mail, process control, and monitoring and gaming applications.

- VLSI products—sophisticated signal system components sold in the electronics industry, including Viterbi and Trellis decoders, speech encoders, direct digital synthesizers, and phase-locked loops
- Government services—an encryption system incorporated into the CDMA digital system architecture that provides an additional level of security, for use in government applications
- Electronic Cinema—a technology under development featuring the digitization and compression of 35mm film for electronic digital delivery of movies to theaters

Clients

OmniTRACS clients include Builders Transport, Chemical Lehman Tank Lines, Covenant Transport, C.R. England, Epes Carriers, J.B. Hunt Transportation, KLLM Transport Services, M.S. Carriers, North American Van Lines, Roberts Express, Schneider National, Werner Enterprises, B&P Trucking, Inc., the U.S. Army, and Ozark Motor Lines.

Marketing and Sales

QUALCOMM sells its OmniTRACS products primarily through its direct sales force, including software systems and field engineering support personnel in five regions throughout the U.S. Outside the U.S., QUALCOMM works with international

telecommunications companies and operators to establish OmniTRACS operations in foreign markets.

QUALCOMM has licenses with various manufacturing companies for its CDMA technology.

VLSI circuits are sold through direct sales and through domestic and international sales representatives.

In addition, QUALCOMM participates in marketing agreements with various partners to promote and sell its OmniTRACS system and CDMA technology products and services. Among recent agreements are the following:

- QUALCOMM signed an agreement in March 1996 with Inter-Tel Incorporated, a provider of business telephone systems, telecommunications software applications, computer-telephony integration (CTI), voice processing software, and long-distance calling services. The agreement provides for QUALCOMM to incorporate Inter-Tel's AXCESS digital platform into its QCT-8000 Concentrated Subscriber System. The QCT-8000 will be marketed internationally under QUALCOMM's QCTel line WLL infrastructure and subscriber equipment.
- In February 1996, QUALCOMM entered into a license and distribution agreement with Samsung America, Inc. whereby Samsung will be the exclusive distributor of QUALCOMM's OmniTRACS system in Korea.

As previously mentioned, QUALCOMM and Loral plan to develop and commercialize Globalstar through their partnership with various international telecommunications services providers.

Alliances

QUALCOMM has a 34% interest in a French joint venture, ALCATEL QUALCOMM, S.A., which sells, markets, and services its OmniTRACS products, services, and communications hub equipment in Europe.

- Alcatel N.V. holds a 66% interest in the joint venture.
- ALCATEL QUALCOMM has primary responsibility for managing and supporting the OmniTRACS European operations.
- QUALCOMM also holds a 40% interest in Alcatel Mobicom, the OmniTRACS service provider for the Benelux countries.

QUALCOMM holds a 49% interest in Loral QUALCOMM Partnership, L. P. (LQP), a limited partnership with Loral Corporation and AirTouch, ALCATEL, Alenia, DACOM, Deutsche Aerospace, Hyundai, and Vidafone, a group of international telecommunications companies.

- This limited partnership was converted in 1994 from a joint venture between QUALCOMM and Loral, which had been formed to design and operate a global satellite communications system called Globalstar.

Through the company's ownership in LQP, it indirectly owns approximately 7.9% of Globalstar L.P., a limited partnership formed in March 1994 to develop, own, and operate the Globalstar LEO satellite-based wireless communications system.

- Globalstar uses QUALCOMM's CDMA technology and consists of 48 low-earth-orbit (LEO) satellites using satellite gateways to existing terrestrial communication systems.

- During fiscal 1995, revenue for Globalstar L.P. accounted for 19% of QUALCOMM's revenue.
- Globalstar L.P. and QUALCOMM have entered into a four-year development agreement under which Globalstar L.P. will fund QUALCOMM to design and develop, by 1998, the subscriber equipment and ground communications segments of the Globalstar system.

Through one of its subsidiaries, QUALCOMM owns 51% of QUALCOMM Personal Electronics (QPE), a joint venture formed in 1994 with a subsidiary of SONY Electronics, Inc. QPE develops CDMA subscriber equipment for cellular, personal communications services (PCS), and other wireless applications.

In 1994, QUALCOMM acquired a 20% interest in Entel Telfonia Movil S.A., a joint venture with Empresa Nacional de Telecomunicaciones S.A., a company that provides the main national and international long distance telecommunications in Chile.

QUALCOMM has a 2.6% interest in Shinsegi Mobil Communications Co., Ltd., a joint venture with a license to be a second nationwide cellular carrier in Korea.

In December 1994, QUALCOMM entered into a series of agreements with Northern Telecom for the design, development, manufacture, and sale of CDMA network equipment.

QUALCOMM has also entered into other agreements for domestic and international joint ventures to provide advanced communications systems and products based on wireless technology. Effective ownership interests in these alliances range from 5% to 20%.

Competition

The principal competition to the OmniTRACS system includes firms that offer two-way satellite or terrestrial-based communications systems. QUALCOMM also faces potential competition from satellite systems services offered by American Mobile Satellite Corporation and its value added-service providers, including Rockwell.

Further potential competition for the OmniTRACS system comes from Inmarsat, an international satellite consortium of 71 member nations currently providing maritime and aeronautical satellite communications worldwide. Inmarsat has entered the land mobile communications market in areas outside the U.S. and is seeking authority to enter the U.S. market.

The OmniTRACS system may also experience competition in the future from LEO satellite communication systems.

Primary competition in CDMA technology comes from analog and digital TDMA-based systems, including GSM and DCS 1900, the GSM implementation for PCS in the U.S., and those developed by AT&T, Motorola, Northern Telecom, OKI Electric, Ericsson, and Hughes Network Systems.

INPUT Assessment

QUALCOMM's investment in the Globalstar L.P. limited partnership is progressing well, and the company signed its first Globalstar handset licensee in December 1995.

QUALCOMM's CDMA technology has been designed to meet the increasing requirements of wireless communications—including supplying larger capacity, greater in-building coverage, improved and consistent quality, and portable telephones with longer talk times—at low cost. QUALCOMM's technology is well-positioned to provide wireless access to the broadening information highway.

In addition to providing QUALCOMM with revenue opportunities, the company's marketing alliance with Sony also presents opportunities to learn from Sony and improve QUALCOMM's own consumer product expertise.

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

August 1994

QUALCOMM Incorporated

Chairman & CEO: Irwin Mark Jacobs
 President & COO: Harvey P. White
 6455 Lusk Boulevard
 San Diego, CA 92121-2779
 Phone: (619) 587-1121
 Fax: (619) 587-8276

Status:	Public
Employees:	1,400 (4/94)
Revenue:	\$ 168,708,000
Fiscal Year End:	9/26/93

Key Points

- QUALCOMM is a leader in digital wireless communications technologies.
- The company's OmniTRACS[®] vehicle communications system business was expanded late in 1993 with the acquisition of Motorola's terrestrial SMR CoveragePLUS[®] business.
- During 1993, QUALCOMM's Code Division Multiple Access (CDMA) wireless technology was adopted as a digital standard by the U.S.

and was selected by Korea for its digital cellular system.

- QUALCOMM is a member of Globalstar, L.P., a limited partnership including Loral Corporation and a group of international telecommunications companies. The partnership will own and operate 48 low-earth orbit (LEO) satellites using QUALCOMM's CDMA technology to offer worldwide low-cost voice, data, fax and position location services through telecommunications service providers.

Company Description

QUALCOMM develops, manufactures, markets, licenses and operates advanced communications systems and products based on digital wireless technology.

- QUALCOMM's principal product is the OmniTRACS System, a two-way mobile satellite communications and tracking system that provides messaging, position reporting and other services for transportation companies and other mobile and fixed-site customers. OmniTRACS-related products and services accounted for approximately 70% of the company's total revenue in fiscal 1993.
- QUALCOMM develops, licenses and manufactures products incorporating its proprietary Code Division Multiple Access (CDMA) technology for wireless applications, including the cellular, personal communications services (PCS) and wireless local loop markets. CDMA provides greater capacity and improved quality and reliability compared to existing analog cellular systems.
- The company also develops various advanced digital communications products and services ranging from high definition television (HDTV) signal processing components and very large scale integrated (VLSI) circuits, to military airborne communications systems and low-earth orbit (LEO) and geostationary satellite communications systems.

QUALCOMM was founded in July 1985 and became a public company in December 1991.

Operations and Structure

QUALCOMM is organized into three primary business units—OmniTRACS, CommSystems and Wireless Telecommunications.

In addition to its headquarters in San Diego, the company has offices in Boulder (CO), Irving (TX), Kansas City (MO), Las Vegas (NV), Norcross (GA), Salt Lake City (UT), Sweickley (PA), Washington, D.C. and Haifa (Israel).

Company Strategy

Using its expertise in digital wireless technology, QUALCOMM's strategy is to be a leading provider of digital wireless communications products and services.

- The company continues to place a strong emphasis on obtaining U.S. and foreign patents and other protection for its technology. Its issued patents provide broad coverage for the OmniTRACS system and many digital wireless applications of CDMA, including satellite, cellular, cordless telephone, PCS, wireless PBX and wireless local loop applications. QUALCOMM is actively pursuing the international wireless local loop, cellular and PCS markets.
- QUALCOMM continues to establish industry partnerships with domestic and international communications companies and contracts with commercial and government entities to help QUALCOMM define, fund and validate new products and services.
- QUALCOMM manufactures its products and components which assists the company in accelerating its products to market.
- The company looks forward to increased opportunities in its government business, including actively marketing its CDMA and OmniTRACS technology, as well as its conventional military technology.

Financials

QUALCOMM's fiscal 1993 revenue reached \$168.7 million, a 57% increase over fiscal 1992 revenue of \$107.5 million. Net income reached \$12.1 million, compared to net losses of \$4.1 million in fiscal 1992.

- Revenue growth was primarily due to the growth in sales of OmniTRACS units and message service revenues, higher levels of CDMA and OmniTRACS license and development fees, increased revenues on PCS

contracts and increased efforts on the production subcontract to supply Data Link Subsystems (DLS) for the Department of Defense.

- A five-year financial summary follows:

QUALCOMM Incorporated
Five-Year Financial Summary
 (\$ Millions, except per share data)

Item	Fiscal Year				
	9/93	9/92	9/91	9/90	9/89
Revenue	\$168.7	\$107.5	\$89.9	\$46.5	\$31.7
• Percent change from previous year	57	20%	93%	47%	194%
Income (loss) before taxes	\$13.3	\$(2.3)	\$(8.3)	\$(17.1)	\$(16.0)
• Percent change from previous year	678	60%	51%	(7%)	N/A
Net income (loss)	\$12.1	\$(4.1)	\$(8.4)	\$(17.1)	\$(16.0)
• Percent change from previous year	(a) 395%	(a) 51%	51%	(7%)	(132%)
Earnings (loss) per share	\$0.50	\$(0.21)	\$(0.53)	\$(1.16)	\$(1.41)
• Percent change from previous year	338%	60%	54%	18%	(40%)

(a) Includes equity in losses of joint ventures of \$198,000 in fiscal 1993 and approximately \$1.3 million in fiscal 1992.

QUALCOMM generates revenue from its domestic OmniTRACS system as follows:

- QUALCOMM manufactures and sells OmniTRACS terminals for installation in customers' vehicles, primarily in the trucking industry.
- QUALCOMM provides ongoing messaging and maintenance services to OmniTRACS users.
- QUALCOMM sells applications software packages that enable OmniTRACS customers to interface the OmniTRACS system with customers' in-house computer systems for use

in various monitoring, reporting, tracking and operating applications.

- Internationally, QUALCOMM recognizes revenue from supplying OmniTRACS ground units/hubs and providing development and ongoing engineering support.
- OmniTRACS revenue in Europe comes primarily from a joint venture with Alcatel, in which QUALCOMM has a minority interest. The venture has incurred operating losses since its inception.

Substantially all of QUALCOMM's CDMA revenues to date have been derived from licensing and development agreements with domestic and international wireless communications participants.

QUALCOMM-sponsored research and development expenses were approximately \$27.4 million in fiscal 1993, \$25.2 million in fiscal 1992 and \$22.7 million in fiscal 1991. Most of these expenditures are related to QUALCOMM's development of CDMA technology and the OmniTRACS system.

Revenue Analysis by Product/Service

Approximately 73% (\$123.8 million) of QUALCOMM's fiscal 1993 revenue was derived from communications systems, 10% (\$16.3 million) from license and development fees and 17% (\$ 28.6 million) from contract services.

- Communications systems revenue consists primarily of revenues from the sale of the OmniTRACS system, complementary software products, related messaging service and maintenance and sales of VLSI chips. Product sales were 74% (\$91.6 million) of communications systems revenues and services were 26% (\$22.2 million).
- License and development fees come primarily from OmniTRACS and CDMA technology licensing and development.
- Contract services revenue comes cellular and PCS contracts using CDMA technology and contracts with the U.S. government.

A three-year summary of source of revenue by product/service follows:

QUALCOMM Incorporated
Three-Year Source of Revenue Summary
(\$ Millions)

Product/Service	Fiscal Year					
	9/93		9/92		9/91	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Communications systems	\$123.8	73%	\$84.4	79%	\$54.4	61%
License and development fees	16.3	10%	9.1	8%	25.8	28%
Contract services	28.6	17%	14.0	13%	9.7	11%
Total	\$168.7	100%	\$107.5	100%	\$89.9	100%

Interim Results

Revenue for the nine months ending June 26, 1994 reached \$193 million, a 66% increase over revenue of \$116 million for the same period in

1993. Net income was \$16.9 million, compared to \$4.8 million for the same period a year ago.

- Revenue from communications systems rose 61%, license and development fees rose more

than 140% and contract service revenue increased 58% for the period.

Market Financials

Approximately 70% of fiscal 1993 revenue was derived from the transportation industry, primarily trucking companies.

- QUALCOMM markets OmniTRACS products and services to business and government agencies involved in the transportation of goods, equipment and supplies where vehicle location and the ability to maintain communications are important.
- OmniTRACS customers include 10 of the top 20 truckload carriers in the U.S.

U.S. government contracts and subcontracts accounted for approximately 6% (\$10 million) of revenue in fiscal 1993, 5% (\$5.6 million) of

revenue in fiscal 1992 and 11% (\$9.7 million) of revenue in fiscal 1991.

QUALCOMM's CDMA revenue is derived from domestic and international wireless communications companies. QUALCOMM expects to derive additional revenues through the sale of CDMA subscriber and network equipment manufactured by QUALCOMM, the sale of CDMA chip sets and test equipment to licensees and through license fees and royalties from sales of CDMA equipment by QUALCOMM licensees.

Geographic Markets

Approximately 78% of fiscal 1993 revenue was derived from the U.S. and 21% (exclusive of the Alcatel joint venture) was derived from international sources.

A three-year summary of geographic sources of revenue follows:

QUALCOMM Incorporated
Three-Year Source of Revenue Summary
(\$ Millions)

Geographic Market	Fiscal Year					
	9/93		9/92		9/91	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
U.S.	\$133.3	79%	\$87.1	81%	\$81.8	91%
International (a)	35.4	21%	20.4	19%	8.1	9%
Total	\$168.7	100%	\$107.5	100%	\$89.9	100%

(a) Includes revenue from Asia of \$23.8 million in fiscal 1994 and \$12.5 million in fiscal 1993 and revenue from Canada of \$4.9 million in fiscal 1994 and \$5.5 million in fiscal 1993.

Acquisitions

In November 1993, QUALCOMM purchased from Motorola certain assets of CoveragePLUS, a terrestrial radio-based system, for approximately \$8 million. Under the agreement, QUALCOMM and Motorola are working together to convert existing CoveragePLUS customers to QUALCOMM's OmniTRACS system.

Employees

As of November 21, 1993, QUALCOMM had 1,262 full-time and temporary employees, segmented as follows:

Engineering and engineering support	45%
Manufacturing.....	25%
Sales and marketing	9%
General and administrative	8%
Service center support.....	13%
	100%

QUALCOMM currently has approximately 1,700 employees.

Key Products and Services

QUALCOMM offers products and services in three areas—OmniTRACS, CDMA and other Communications Systems.

OmniTRACS

The OmniTRACS system is a wireless system that provides transportation companies and other mobile customers with two-way data message transmission and position reporting services via geosynchronous satellites.

- Vehicles are outfitted with OmniTRACS terminals manufactured by QUALCOMM and consist of a keyboard-display, a transceiver and an antenna. Terminals

operate on C-band or Ku-band, depending on which satellites are available.

- In addition to the vehicle hardware, the carrier's host computer system is normally augmented with QUALCOMM software to integrate the OmniTRACS system into the users' operations.
 - Messages and position reports are communicated from the OmniTRACS units via satellite to the system hub or Network Management Centers (NMCs). QUALCOMM designs, builds and provides the equipment for the NMCs.
 - QUALCOMM is the message service operator for the U.S. and receives message revenue from all OmniTRACS units communicating through QUALCOMM's NMC. The company currently processes approximately 1.5 million messages and position reports per day.
 - In addition to selling NMC and mobile terminal equipment, QUALCOMM licenses the OmniTRACS system to international operators who provide messaging and position location service in their respective regions or countries.
- Software offered in conjunction with the OmniTRACS system includes the following:
- SensorTRACS provides on-board recording of vehicle trip data for commercial vehicle operators. Monitoring sensors measure vehicle speed and engine RPM.
 - QTRACS is a message formatting, tracking and display product that can be integrated with standard or custom dispatch software for managing fleets equipped with the OmniTRACS system. InTRACS, a

companion product, provides graphic mapping for systems using QTRACS, allowing dispatchers to immediately locate any vehicle in their fleet on a map display.

- **QUALCOMM Decision Support System (QDSS)** is a family of products to improve the operational efficiency of truckload carriers. QDSS uses QUALCOMM's QMATCH and QSWAP software with real-time positioning and status reports to assist load planners to better optimize freight selection and capacity utilization.
- **Out-of-route and expected-time-of-arrival monitoring** is based on hourly position reports provided by the OmniTRACS system and the QTRACS software.
- Other features include a driver handheld pager, a message return receipt option and panic/emergency button.

QUALCOMM introduced the OmniTRACS system in the U.S. in 1988 and commenced commercial operation in Canada in August 1990 through an agreement with Cancom, in Europe in January 1991 through a joint venture with Alcatel, in Japan in July 1993 through a joint venture with Itochu, Cable & Wireless and others and in December 1993 in Brazil.

- **EutelTRACS** (the OmniTRACS licensed service in Europe) is now available in 15 countries, with more than 5,000 units shipped.
- QUALCOMM is actively pursuing opportunities to expand in Mexico, Central and South America, Africa, Asia and Europe.

As of June 1994, there were more than 390 OmniTRACS customers, including customers converted from CoveragePLUS services. The company has shipped more than 87,000 OmniTRACS units worldwide, including more than 7,800 units to international markets.

Other Communications Systems

QUALCOMM develops, manufactures, markets and distributes communications components and systems for use in a variety of applications. These components and systems range from VLSI circuits and HDTV signal processing components to military airborne communications systems and low-earth orbit and geostationary satellite communications systems.

QUALCOMM and Loral Corporation have a joint venture to design and operate a global satellite communications system called Globalstar. Globalstar will use QUALCOMM's CDMA technology and will consist of 48 low-earth orbit (LEO) satellites using satellite gateways to existing terrestrial communication systems.

- The Globalstar system is being designed to offer low-cost worldwide digital wireless telecommunications services, including voice, data, paging, facsimile and geolocation services, to telephones and data terminals in areas not currently served or underserved by existing telecommunications systems.
- The venture was expanded in early 1994 when QUALCOMM and Loral were joined by a group of international telecommunications companies in establishing Globalstar, L.P., a limited partnership formed to own and operate

Globalstar. The new Globalstar, L.P. partners are AirTouch, Alcatel, Alenia, DACOM, Deutsche Aerospace, Hyundai and Vodafone.

- These partners have initially committed \$275 million to Globalstar's development and deployment joint venture with Loral Corporation. QUALCOMM is designing and plans to manufacture products for a global wireless communications system using low-earth orbit (LEO) satellites.
- Globalstar, L.P. and QUALCOMM also entered into a development agreement valued at approximately \$266 million whereby Globalstar, L.P. will fund QUALCOMM to develop the ground communications segment of the Globalstar system, consisting of gateways, ground operation control centers and Globalstar telephones. QUALCOMM also retains exclusive worldwide rights to use the Globalstar system to augment the company's existing OmniTRACS system.
- It is currently anticipated that Globalstar will begin launching the LEO satellites in 1998.

QUALCOMM designs a variety of VLSI circuits that are used in QUALCOMM's systems and products.

- Many of these VLSI circuits are also marketed and distributed by the company to communications system developers throughout the world through a network of domestic and international sales representatives.
- QUALCOMM's VLSI products include Viterbi and trellis decoders, speech coders, direct digital synthesizers, phase locked loop and voltage-controlled oscillators.

QUALCOMM has developed a Data Link System (DLS) for telemetry reporting on U.S. Department of Defense test and training ranges. The system collects and processes flight and position data received through a global positioning system receiver during airborne exercises and simulations.

QUALCOMM also performs a variety of prime and subcontract work (largely research and development efforts) for various departments and agencies of the U.S. government directed toward communication-related technologies.

CDMA Technology

QUALCOMM is developing products and systems that implement its proprietary CDMA technology, which provides improved voice quality and increases capacity 10 to 20 times for current FM analog cellular systems.

- CDMA uses spread spectrum technology to break up speech into small, digitized segments and encodes them to identify each call. A large number of users can thus share the same band of spectrum and greatly increase system capacity.
- CDMA has undergone extensive field testing and industry review, and has thus far been selected for commercial implementation in the U.S., Korea and the Philippines.
- In July 1993, the Telecommunications Industry Association approved and issued a North American Interim Standard IS-95 for cellular telecommunications based on CDMA technology.

In the U.S., U S WEST NewVector, AirTouch Communications, NYNEX and ALLTEL Mobile have announced agreements to

purchase commercial CDMA cellular equipment for deployment in their markets.

- These systems will use QUALCOMM's CDMA technology in equipment to be manufactured by QUALCOMM and/or its licensees.
- QUALCOMM licenses manufacturers to build CDMA equipment and offers to sell its CDMA chips to these licensees.
- QUALCOMM has licensed AT&T, Goldstar, Hyundai Electronics, Motorola, Northern Telecom and Samsung Electronics to manufacture and sell CDMA network equipment and Alps Electric, AT&T, Goldstar, Hyundai Electronics, Matsushita (Panasonic), Maxon, Motorola, NOKIA Mobile Phones, OKI Electric and Samsung Electronics to manufacture and sell CDMA subscriber equipment. In addition, Mitsubishi and Sony have support agreements with QUALCOMM.
- CDMA rollouts are expected to start in early 1995 and increase rapidly in 1995.

QUALCOMM has increased its efforts to apply CDMA to other digital wireless communications services, particularly PCS and wireless local loop.

Clients

OmniTRACS clients include Builders Transport, Chemical Lehman Tank Lines, Covenant Transport, C.R. England, Epes Carriers, J.B. Hunt Transportation, KLLM Transport Services, M.S. Carriers, North American Van Lines, Roberts Express, Schneider National, Werner Enterprises

Marketing and Sales Alliances

QUALCOMM sells its OmniTRACS products primarily through its direct sales force, including software systems and field engineering support personnel in five regions throughout the U.S. Outside the U.S., QUALCOMM works with international telecommunications companies and operators to establish OmniTRACS operations in foreign markets.

As previously mentioned, QUALCOMM has licenses with various manufacturing companies for its CDMA technology.

VLSI circuits are sold through direct sales and through domestic and international sales representatives.

As previously mentioned, QUALCOMM and Loral plan to develop and commercialize Globalstar through their partnership with various international telecommunications services providers.

QUALCOMM and Sony Electronics have formed a partnership—QUALCOMM Personal Electronics—to manufacture CDMA digital cellular and PCS telephone products.

In July 1994, QUALCOMM and Northern Telecom announced their intention to develop and cooperatively market worldwide a turnkey CDMA wireless infrastructure system to Cellular (800/900 Mhz) and PCS (1.8-2.0 Ghz) service providers using QUALCOMM's CDMA base station equipment and Northern Telecom's DMS-MTX SuperNode digital mobility switching systems.

QUALCOMM has signed a support and teaming agreement for CDMA technology with Tatum Co. to respond to growing

industry interest for CDMA cellular communications systems and pursue CDMA projects in Taiwan.

Competitors

The principal competition to the OmniTRACS system includes firms that offer two-way satellite or terrestrial-based communications systems. QUALCOMM also faces potential competition from satellite systems services planned by American Mobile Satellite Corporation and its suppliers Trimble, Rockwell, Westinghouse and Mitsubishi.

Primary competition of CDMA technology is from TDMA-based systems, including those developed by AT&T, Motorola, Northern Telecom, OKI Electric, Ericsson and Hughes Network Systems.

INPUT Assessment

QUALCOMM's investment in the Globalstar L.P. limited partnership has positioned the company with a significant, broad group of telecommunications companies for the development of the Globalstar LEO satellite communications system.

QUALCOMM's CDMA technology has been designed to meet the increasing requirements of wireless communications—including supplying larger capacity, greater in-building coverage, improved and consistent quality and portable telephones with longer talk times—at low cost. QUALCOMM's technology is well-positioned to provide wireless access to the broadening information highways.

QUALCOMM's joint venture with Sony provides QUALCOMM with further revenue opportunities and a strong manufacturing partner for distributing its CDMA technology.

COMPANY PROFILE

QUALITY SYSTEMS, INC.

17822 East 17th Street
Tustin, CA 92680
(714) 731-7171

Sheldon Razin, Chairman and President
Public Corporation, NASDAQ
Total Employees: 122 (6/92)
Total Revenue, Fiscal Year End
3/31/92: \$11,710,200

The Company

Quality Systems, Inc. (QSI), founded in 1974, provides IBM-based turnkey systems primarily to medical and dental group practices. QSI is an IBM Industry Remarketer Business Partner.

- During fiscal 1989, QSI underwent an extensive research and development effort to port its medical and dental management software code from the MICOS to the AIX operating system, IBM's version of UNIX. By the end of fiscal 1989, QSI had introduced a family of IBM RT/UNIX-based systems capable of supporting one to several hundred terminals.
- Fiscal 1990 was a year of transition for QSI, as it continued the introduction of its family of IBM UNIX-based systems; expanded its marketing and sales operations by adding sales personnel and developing new marketing programs for these new systems; and completed development of certain system enhancements and upgrades. Primarily as a result of this transition, costs and expenses increased from 65% of total revenue in fiscal 1989 to 71% of revenues for fiscal 1990.
- During the second quarter of fiscal 1991, QSI successfully integrated the new family of IBM RS/6000 systems into its medical and dental product lines.

QSI's fiscal 1992 revenue was \$11.7 million, an 11% decrease from fiscal 1991 revenue of \$13.1 million. Net losses were \$199,000, compared to net losses of \$352,000 for fiscal 1991. A five-year financial summary follows:

**QUALITY SYSTEMS, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	3/92	3/91	3/90	3/89	3/88
Revenue	\$11,710	\$13,125	\$9,623	\$8,806	\$9,825
• Percent change from previous year	(11%)	36%	9%	(10%)	2%
Income (loss) before taxes	\$(199)	\$(352)	\$(1,228)	\$(749)	\$(95)
• Percent change from previous year	43%	71%	(64%)	(688%)	(112%)
Net income (loss)	\$(199)	\$(352)	\$(850)	\$(314)	\$(203)
• Percent change from previous year	43%	59%	(171%)	(55%)	(139%)
Earnings (loss) per share	\$(0.05)	\$(0.08)	\$(0.20)	\$(0.07)	\$(0.05)
• Percent change from previous year	38%	60%	(186%)	(40%)	(142%)

Revenue declines during fiscal 1992 were attributed to a 22% decline in sales from turnkey systems and supplies due to the overall weak economy and uncertainty in the health care marketplace regarding changing governmental regulations.

- Revenues from maintenance and support services increased 12% during the year.
- Costs of products and services decreased from 67% of revenue in fiscal 1991 to 64% of revenue in fiscal 1992, primarily reflecting a higher proportion of higher margin, large system sales.
- Research and development expenditures increased from \$895,000 in fiscal 1990 to \$961,000 in fiscal 1991 and over \$1.1 million in fiscal 1992 as the company continued to enhance the functionality and flexibility of its systems.

QSI competitors in the group medical practice area include CyCare, IDX, and Medic. In the dental group practice area, competition comes from various smaller firms, including AlphaHealthCare, International Computer Systems, and Sytar.

Key Products and Services

Approximately 60% of QSI's fiscal 1992 revenue was derived from turnkey systems, upgrades, and supplies, and 40% from maintenance and associated support services. A three-year summary of source of revenue follows:

**QUALITY SYSTEMS, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

ITEM	FISCAL YEAR					
	3/92		3/91		3/90	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Turnkey systems, upgrades, and supplies	\$6,972	60%	\$8,844	67%	\$5,165	54%
Maintenance and other	4,738	40%	4,281	33%	4,458	46%
TOTAL	\$11,710	100%	\$13,125	100%	\$9,623	100%

QSI currently markets and supports UNIX-based medical and dental group practice management systems.

- QSI's proprietary software includes applications for patient information, patient appointment scheduling, third-party reimbursement reporting, billing, insurance claim form processing and reporting, electronic insurance claim processing, income allocation, word processing, and general accounting. QSI also integrates various third-party software packages.
- The hardware configuration of a typical system consists of an IBM central processing unit, a disk drive, a magnetic tape unit, video display terminals, one or more printers, and telecommunications equipment. The systems are modular in design and may be expanded in capacity from one to hundreds of video display units, depending on the needs of the user.
- QSI currently has over 500 systems installed for over 500 clients.

QSI typically enters into support service agreements and/or hardware maintenance agreements with its clients for a fixed monthly fee. Services are provided on an emergency basis, 24 hours a day, seven days a week.

- QSI's continuing software support staff operates from the company's offices in Tustin (CA) and remote offices in Bethel

(CT) and Carnation (WA). QSI maintains telecommunications access to all client systems, permitting automated remote on-line support.

- The hardware maintenance services are conducted from field service offices in Santa Ana, Sacramento, and Nevada City (CA); Lake Mills and South Milwaukee (WI); Spotswood (NJ); Allentown (PA); Buncambe (IL); Charlotte (NC); and Aurora (CO).
- For newer systems (IBM RT/RS/6000 systems), QSI sometimes contracts with IBM to perform specific hardware maintenance tasks under QSI's direction.

QSI also provides installation and training services for its systems.

Industry Markets

One hundred percent of QSI's revenue is derived from the medical industry.

QSI concentrates its marketing efforts primarily on group practices of three or more physicians or dentists. The company believes that its integrated practice management systems are particularly suited to growing and larger health care facilities requiring extensive computing capabilities as well as facilities with multiple office sites.

Several QSI clients are providing timesharing services to local single practitioners.

Geographic Markets

One hundred percent of QSI's revenue is derived from the U.S.

QSI markets its products nationwide through a direct sales force consisting of marketing representatives operating out of sales offices in California, Illinois, and Washington.

COMPANY PROFILE

QUALITY SYSTEMS, INC.

17822 East 17th Street
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(714) 731-7171

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The Company

Quality Systems, Inc. (QSI), founded in 1974, provides IBM-based turnkey systems primarily to medical and dental group practices. QSI is an IBM Industry Remarketer Business Partner.

- During fiscal 1989, QSI underwent an extensive research and development effort to port its medical and dental management software code from the MICOS to the AIX operating system, IBM's version of UNIX. By the end of fiscal 1989, QSI had introduced a family of IBM RT/UNIX-based systems capable of supporting one to several hundred terminals.
- Fiscal 1990 was a year of transition for QSI, as it continued the introduction of its family of IBM UNIX-based systems; expanded its marketing and sales operations by adding sales personnel and developing new marketing programs for these new systems; and completed development of certain system enhancements and upgrades. Primarily as a result of this transition, costs and expenses increased from 65% of total revenue in fiscal 1989 to 71% of revenues for fiscal 1990.
- During the second quarter of fiscal 1991, QSI successfully integrated the new family of IBM RS6000 systems into its medical and dental product lines.

QSI's fiscal 1991 revenue reached \$13.1 million, a 36% increase over fiscal 1990 revenue of \$9.6 million. Net losses were \$352,000, compared to net losses of \$850,000 for fiscal 1990. A five-year financial summary follows:

**QUALITY SYSTEMS, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	3/91	3/90	3/89	3/88	3/87
Revenue	\$13,125	\$9,623	\$8,806	\$9,825	\$9,593
• Percent change from previous year	36%	9%	(10%)	2%	N/A
Income (loss) before taxes	\$(352)	\$(1,228)	\$(749)	\$(95)	\$779
• Percent change from previous year	71%	(64%)	(688%)	(112%)	N/A
Net income (loss)	\$(352)	\$(850)	\$(314)	\$(203)	\$516
• Percent change from previous year	59%	(171%)	(55%)	(139%)	N/A
Earnings (loss) per share	\$(0.08)	\$(0.20)	\$(0.07)	\$(0.05)	\$(0.12)
• Percent change from previous year	60%	(186%)	(40%)	(142%)	N/A

Revenue increases during fiscal 1991 were attributed to a 71% increase in sales of computer systems, upgrades, and supplies. This increase was due to continuing sales of the company's family of UNIX-based systems and enhancements, an increased penetration in the medical marketplace, and QSI's strategic focus on larger system sales.

- QSI sold a record 105 UNIX-based systems during fiscal 1991, an increase of more than 100% over fiscal 1990.
- Costs of products and services decreased from 71% of revenue in fiscal 1990 to 67% of revenue in fiscal 1991, primarily reflecting a higher proportion of higher margin, large system sales.
- Research and development expenditures increased from \$895,000 in fiscal 1990 to \$961,000 in fiscal 1991 as the company continued to enhance the functionality and flexibility of its systems.

QSI competitors in the group medical practice area include CyCare, IDX, and Medic. In the dental group practice area, competition comes from various smaller firms, including AlphaHealthCare, International Computer Systems, and Sytar.

Key Products and Services

Approximately 67% of QSI's fiscal 1991 revenue was derived from turnkey systems, upgrades, and supplies, and 33% from maintenance and associated support services. A three-year summary of source of revenue follows:

**QUALITY SYSTEMS, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

	FISCAL YEAR					
	3/91		3/90		3/89	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Turnkey systems, upgrades, and supplies	\$8,844	67%	\$5,165	54%	\$4,427	50%
Maintenance and other	4,281	33%	4,458	46%	4,379	50%
TOTAL	\$13,125	100%	\$9,623	100%	\$8,806	100%

QSI currently markets and supports UNIX-based medical and dental group practice management systems.

- QSI's proprietary software includes applications for patient information, patient appointment scheduling, third-party reimbursement reporting, billing, insurance claim form processing and reporting, electronic insurance claim processing, income allocation, word processing, and general accounting.
- The hardware configuration of a typical system consists of an IBM central processing unit, a disk drive, a magnetic tape unit, video display terminals, one or more printers, and telecommunications equipment. The systems are modular in design and may be expanded in capacity from one to hundreds of video display units, depending on the needs of the user.
- QSI currently has over 500 systems installed for over 500 clients.

QSI typically enters into support service agreements and/or hardware maintenance agreements with its clients for a fixed monthly fee. Services are provided on an emergency basis, 24 hours a day, seven days a week.

- QSI's continuing software support staff operates from the company's offices in Tustin (CA) and a remote office in Westport

(CT). QSI maintains telecommunications access to all client systems, permitting automated remote on-line support.

- The hardware maintenance services are conducted from field service offices in Santa Ana, Sacramento, and Nevada City (CA); Milwaukee (WI); Sugar Land (TX); Edison (NJ); Federal Way (WA); Charlotte (NC); and Aurora (CO).
- For newer systems (IBM RT/RS6000 systems), QSI sometimes contracts with IBM to perform specific hardware maintenance tasks under QSI's direction.

QSI also provides installation and training services for its systems.

Industry Markets

One hundred percent of QSI's revenue is derived from the medical industry.

QSI concentrates its marketing efforts primarily on group practices of three or more physicians or dentists. The company believes that its integrated practice management systems are particularly suited to growing and larger health care facilities requiring extensive computing capabilities as well as facilities with multiple office sites.

Several QSI clients are providing timesharing services to local single practitioners.

Geographic Markets

One hundred percent of QSI's revenue is derived from the U.S.

QSI markets its products nationwide through a direct sales force consisting of marketing representatives operating out of sales offices in California, Oregon, Texas, and Wisconsin.

Dropped 1/81

COMPANY HIGHLIGHT

QUALITY STATIONERS AND PRINTERS, INC.

4155 West 123rd Street
Alsop, IL 60653
(312) 821-1600

Richard Strand, President
Private
Total employees: 70
Total revenues fiscal year end
9/30/77: \$4,000,000
Computer services revenues
fiscal 1977: \$1,000,000

THE COMPANY

- Quality Stationers and Printers, Inc. (QSP) has been an Illinois corporation since 1950. The firm, started primarily as a printer and distributor of stationery, has since expanded into computer services and equipment.
- Computer services represent about 20% of fiscal 1977 revenues.
 - QSP began providing computer services when it tracked individual credit card holders and prepared frequent lists of delinquent accounts and cancelled and stolen cards.
 - The firm stopped providing the credit card reporting service when major credit card issuers associations, such as VISA USA, Inc. (formerly National BankAmericard, Inc.) and Interbank, began offering the service to their members.
 - The computer services business currently consists of computerized typesetting, data preparation, directory updates, and accounting applications.
 - All three divisions of QSP contribute to computer services revenues.
- Revenues for fiscal 1978 are projected to increase by 15% to approximately \$4.6 million. Management claims the company is profitable.
- About 31 of QSP's 70 employees generate computer services. They are distributed as follows:

- Solely computer services, such as data entry	6
- Programmers who occasionally perform customer support	2
- Salespeople who market mostly computer services	3
- Typesetters and related mechanized functions, approximately	<u>20</u>
	31

August 1978

COMPANY HIGHLIGHT/QUALITY STATIONERS AND PRINTERS, INC.

KEY PRODUCTS AND SERVICES

- All of QSP's computer services revenues come from processing services. About 90% of these processing services are batch and 10% interactive remote computing.
- General business and utility services include:
 - Accounts payable, accounts receivable, and other accounting services.
 - Mailing services for physicians include patient appointment reminders.
 - Data base management systems, sort and merge routines are provided to users of computerized typesetting services.
 - Automated directories, price lists, and other generally repetitive outputs. Some grocery distributors and hardware wholesalers use QSP services to update 20 page price lists every one to two weeks. QSP has also prepared and updated directories of automobile costs and veterinarians worldwide.
 - Some directory listings go directly to computer output microfilm.
- About four of QSP's customers currently use remote computing for on-line typesetting. Management states that this will be a continuing trend for QSP.
- Management plans to begin offering turnkey systems for use in typesetting.

APPLICATIONS MARKETS Approximately 60% of QSP revenues are derived from business applications and 40% from utility applications associated with automated typesetting.

INDUSTRY MARKETS QSP users are from several industries with some concentration in retail and wholesale distribution. Industries served include the following:

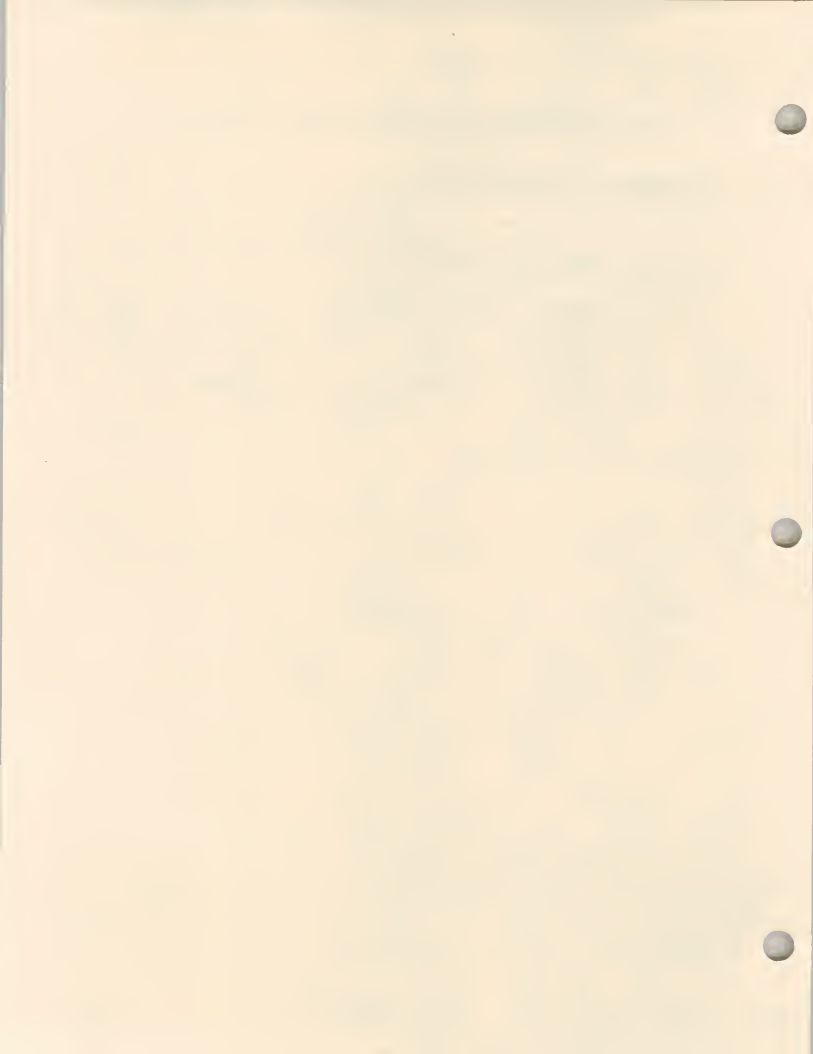
- Retail distribution
- Wholesale distribution
- Discrete manufacturing (printing)
- Medical
- Education
- Membership organizations such as trade associations and trade unions.

GEOGRAPHIC MARKETS About 95% of QSP computer services revenues are generated in the East North Central region of the U.S., within a 100 mile radius of Chicago, 2% in Colorado, and 3% in California.

COMPANY HIGHLIGHT/QUALITY STATIONERS AND PRINTERS, INC.

COMPUTER HARDWARE AND SOFTWARE

- QSP does not have an in-house mainframe computer.
- It uses peripheral devices such as intelligent terminals and diskettes to provide its processing services.
 - Minicomputers used as peripherals include the DEC/PDP-11, the IBM System/3, and the Data General Nova.
 - The company goes outside for specialty equipment such as the RCA Videocomputer which facilitates fast, inexpensive typesetting for large volumes of printing.
 - In all, four different machines are used for photocomposition.



Disproved

COMPANY HIGHLIGHT

QUALTERM TERMINALS
2007 O'Toole Avenue
San Jose, CA 95131
(408) 263-7800

Dan O'Rourke, President
Division of Data Equipment Corporation
Total employees: 10*
Total revenues, fiscal year end 9/76:
\$1 million*

COMPANY BACKGROUND:

- Data Equipment Corporation is a shell corporation started in 1975 by President Dan O'Rourke to acquire QUALTERM TERMINALS. In December 1975, Data Equipment acquired from QUALTERM the product line, user base, assets, and exclusive U. S. use of the QUALTERM TERMINALS name, but no liabilities.
- O'Rourke added a floppy disc drive to enhance the capability of the existing word processing QUALTERM TERMINALS and began installing units in the spring of 1976.

OVERALL ASSESSMENT:

- QUALTERM TERMINALS is a one-product company. Its terminals have been installed at customer sites for about a year and are performing reliably. Service is provided in 80 U. S. cities through an agreement with Dow Jones.
- The terminals have multiple functional capabilities of interest to users in medicine and education as well as in government and industry. These capabilities include word processing, TWX, Telex, and online communications with mainframes and other terminals. The company has pioneered in the use of 600 baud rate communications.
- Financially, Data Equipment Corp. is still weak. Debt resulting from the acquisition of QUALTERM will be increased by the acquisition later this year of Datastat, a modem and multiplexor manufacturer.
- O'Rourke, attempting to extend his user base, has established a large network of distributors and representatives to market the terminals throughout the U. S. and Canada. To date, however, new customers have primarily been obtained by word of mouth.

KEY PRODUCTS AND SERVICES:

- QUALTERM's only product, a communicating word processing terminal system, is installed at more than 100 locations in 12 cities in the U. S. and Canada. This multifunction terminal utilizes an Intel

* Estimate by INPUT

December/1976
58.1

INPUT

COMPANY HIGHLIGHT/QUALTERM TERMINALS

4004 programmable micro-processor, a General Systems, Inc. floppy disc drive and edit unit, and a Qume 55 daisy wheel printer in an integrated desk-like workstation.

- The basic system sells for between \$8,000 and \$9,000 plus maintenance and installation.

INDUSTRY MARKETS:

- The QUALTERM terminal is currently in use in government offices; advertising agencies; universities; hospitals; and aerospace, construction, and manufacturing companies. QUALTERM management plans to change the user base concentration from institution clients to manufacturers.

GEOGRAPHIC MARKETS:

- QUALTERM has representatives or dealers in the following cities: Washington, D. C.; Hartford, Connecticut; Philadelphia, Pennsylvania; Raleigh, North Carolina; Memphis, Tennessee; Jacksonville, Florida; Atlanta, Georgia; St. Louis, Missouri; Chicago, Illinois; Minneapolis, Minnesota; Dallas and Austin, Texas; Albuquerque, New Mexico; Denver, Colorado; San Diego and Los Angeles, California; and Seattle, Washington.

COMPANY BRIEF

Cross Industry: Systems Software

Quintus Computer Systems, Inc.

1310 Villa Street
Mountain View, CA 94041
(415) 965-7700

CEO: Thomas M. Hartnett, President
Private Company
Founded: February 1984

Employees: 42 (10/86)
Revenue (FYE 12/31/85): \$3-5 million

The Company: Develops and markets Prolog-based compilers and logic programming tools

Sources of Revenue:

- Systems Software (100%)

Key Products:

- Systems Software Products (Utilizes DEC VAX, Sun Microsystems, Xerox 1100, Apollo Domain, NCR Tower, IBM RTPC hardware, and the UNIX operating system)
 - Software development tool (Quintus Prolog)

Target Industries:

- Fortune 1000 companies
- Application software developers
- Research organizations
- Colleges and universities
- Federal government agencies

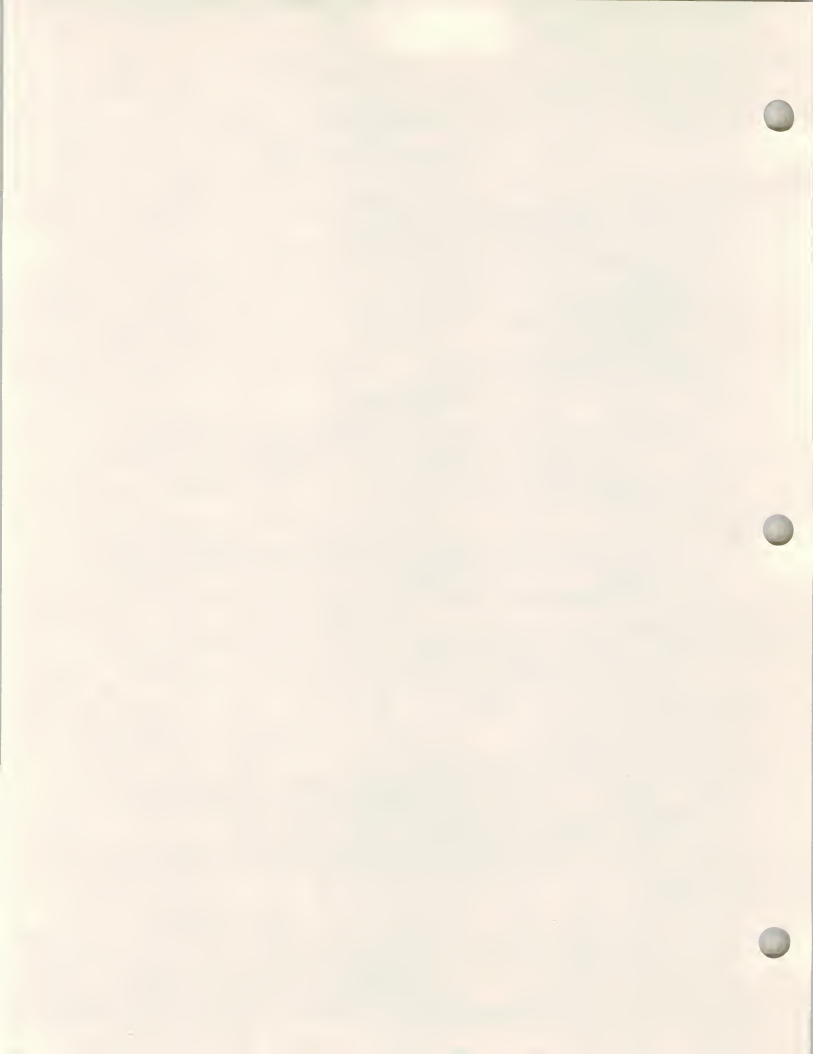
Geographic Markets:

- U.S. and Non-U.S.
- Sales Office: Mountain View (CA)
- European Distributor: Artificial Intelligence Ltd. (Watford, Hertfordshire, U.K.)

Other:

- Installed 400 software packages
- Will support IBM 370 architecture and Tektronix workstations in March 1987

October 1986



Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

August 1996

Quarterdeck Corporation

Chairman: Frank W.T. LaHaye
President & CEO: Gaston Bastiaens
13160 Mindanao Way
Marina del Rey, CA 90292
Phone: (310) 309-3700
Fax: (310) 308-4218
Internet: <http://www.qdeck.com>



Status:	Public
Employees:	532 (9/30/95)
Revenue:	\$70,713,000
Fiscal Year End:	9/30/95

Key Points

- Quarterdeck Corporation (formerly Quarterdeck Office Systems) is a developer of software products in the utilities and Internet areas. The company produces utilities solutions for the Windows environments, and offers a line of Internet and communication tools for corporate, small business, and individual users.

- In July 1996, Quarterdeck acquired Vertisoft Systems, Inc., a developer and publisher of utility software and a leading direct mail marketer.
- In June 1996, Quarterdeck and La Poste, the French national postal service, announced a new collaboration to offer access to telepost services via the Internet; additionally, the company announced that it was consolidating all company operations into two divisions: Internet and Utilities.
- Also in June 1996, Quarterdeck acquired Limbex Corporation, developer of WebCompass, and completed its acquisition

of FutureLabs, Inc., a developer of collaborative computing technology.

- In March of 1996, the company acquired Datastorm Technologies, developer of the communications package PROCOMM Plus.
- Also in March 1996, Quarterdeck completed a private placement of \$25 million of 6% Convertible Subordinated Notes to be used for general corporate purposes, including acquisitions and related activities.
- In January 1996, Quarterdeck named Frank R. Greico Chief Financial Officer and Senior Vice President, and Eoin Gilley as Vice President of Operations for its European operating company.

Company Description

Incorporated in 1992, Quarterdeck Corporation's mission is to make easy-to-use software that lets users enhance and control their systems.

- Historically, the company's primary business was the memory management market for DOS and Windows.
- The company's current focus is on the development, marketing, and support of computer software products in two strategic business areas—utilities and the Internet.

Structure and Operations

Quarterdeck is headquartered in Marina del Rey (CA).

Domestically, the company also has a Development Center in Mountain View (CA), its Quarterdeck Select subsidiary in Clearwater (FL), and its StarNine subsidiary, located in Berkeley (CA).

Quarterdeck's international division, Quarterdeck International, Ltd., is located in Dun Laoghaire, Ireland.

The company has international offices in Chelmsford, Essex, United Kingdom; Paris, France; Dusseldorf, Germany; and Loftus, New South Wales, Australia.

Quarterdeck's key executives are listed below:

Quarterdeck Corporation Key Executives

Name	Title
Gaston Bastiaens	President and CEO
Robert D. Kutnick	Sr. VP Strategic Business Development & CTO
James D. Moise	Sr. VP & President Quarterdeck USA/Rest of World
Eoin Gilley	VP of Operations Quarterdeck International
Frank R. Greico	Sr. VP & CFO
Stephen W. Tropp	Sr. VP Internet Services
Koen Bouwers	VP Internet Division
Alexander Eckelbery	VP Utilities
Walter W. Ethier	VP Worldwide Operation
Ronald B. Hammond	VP Finance
Emerick M. Woods	VP & GM Internet Solutions
Ellen Spooen	VP Corporate Communications
Alex Jacobson	VP Information Management Unit

Company Strategy

Quarterdeck's strategy is to expand and diversify its product and service offerings by developing or acquiring leading products and services in its two strategic business areas: utilities and the Internet.

Market Strategy

Quarterdeck uses multiple distribution channels to deliver its products worldwide,

including software distributors and dealers, value-added resellers, systems integrators, original equipment manufacturers, direct telemarketing, and through the Internet.

Product Strategy

Each of Quarterdeck's business units is responsible for its own product planning, design, development, documentation, and quality assurance.

Quarterdeck uses strategic acquisitions and investments to provide certain technology and products for its overall product strategy and to reduce time to market.

Outside contractors and externally licensed or acquired components are used for aspects of the product development process.

Over the past two years, Quarterdeck has completed a number of acquisitions of companies and products, and expects to acquire other companies and products in the future.

Financials

Quarterdeck's revenue for the fiscal year ending September 30, 1995 was approximately \$70.7 million, an 85% increase of \$38.3 million for fiscal 1994.

In the four-year summary that follows, financials have been restated to reflect the activities of subsidiaries and pooling-of-interests acquisitions.

Quarterdeck Corporation Four-Year Financial Summary (a) (\$ Millions, except per-share data)

Item	Fiscal Year			
	9/95	9/94	9/93	9/92
Revenue	\$70.7	\$38.3	\$52.2	\$55.0
• Percent change from previous year	85%	(27%)	5%	N/A
Income (loss) before taxes	\$4.3	\$(24.9)	\$1.9	\$13.9
• Percent change from previous year	117%	*	(87%)	N/A
Net income (loss)	\$4.1	\$(18.9)	\$1.2	\$9.1
• Percent change from previous year	122%	*	(86%)	N/A
Earnings (loss) per share	\$0.16	\$(0.82)	\$0.05	\$0.45
• Percent change from previous year	120%	*	(88%)	N/A

* Percent change is greater than 1,000%.

a) 1995, 1994, and 1993 figures have been restated to reflect the activities of subsidiaries and pooling adjustments.

Quarterdeck endured a downward swing in revenues from 1992 to 1994, but the company's expansion of its focus and its product offerings have since resulted in a positive swing in the company's financial results.

Company management attributes revenue growth primarily to the broadening of Quarterdeck's product portfolio through product development and acquisitions.

Research and development costs, consisting primarily of salaries and benefits and consulting fees to support product development, were \$8.5 million in 1995 and \$4.1 million in 1994, a 107% increase.

Interim Results

Revenue for the first nine months of 1996, restated for acquisitions, was \$105.7, a 22%

increase from the \$86.3 million reported in revenue for the first nine months of 1995.

- The company generated a net loss during its first nine months of \$19.4 million, a 276% decrease from the \$11 million in net income generated in 1995.
- Quarterdeck management attributes the losses to a decline in sell-through levels for memory management products and a decline to historic rates of sell-through PROCOMM PLUS data communications software.

Geographic Markets

Approximately 78% of Quarterdeck's fiscal 1995 revenue was derived from the U.S. and 22% from international sources.

A three-year geographic source of revenue summary follows:

Quarterdeck Corporation
Three-Year Geographic Source of Revenue Summary
(\$ Millions)

Geographic Area	Fiscal Year					
	9/95		9/94		9/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
U.S.	\$55.4	78%	\$29.0	76%	\$43.6	83%
Europe	10.1	14%	5.8	15%	7.7	14%
Other international	5.2	8%	3.5	9%	1.2	3%
Total	\$70.7	100%	\$38.3	100%	\$52.5	100%

Acquisitions

A primary component of Quarterdeck's repositioning and expansion of its product line has been the acquisition of other companies or their component technologies.

Quarterdeck uses strategic acquisitions and investments to provide certain technology and products for its overall product strategy.

In 1996, Quarterdeck made the following acquisitions:

- In July, Quarterdeck acquired Vertisoft Systems, Inc., a developer and publisher of utility software and a direct mail marketer, for 3.5 million shares of Quarterdeck common stock.
- In June 1996, the company acquired Limbex Corporation, a developer of the WebCompass product line, for approximately \$16 million in stock. The Limbex team will combine with core developers from Quarterdeck to comprise Quarterdeck's new Information Management business unit.
- In May, Quarterdeck acquired FutureLabs, Inc., a Los Altos (CA) developer of real-time collaborative technology that allows two or more people to work together on an application or document. The acquisition, financed by 750,000 Quarterdeck shares, offers Quarterdeck a springboard into the collaborative computing market and will enhance the collaborative abilities of WebTalk.
- In March, Quarterdeck acquired Columbia (MO)-based Datastorm Technologies, developer and worldwide marketer of the PROCOMM brand of communications software. Quarterdeck issued approximately 5.2 million shares of its stock to finance the acquisition, which facilitates the company's collaborative computing and communications strategy.

Quarterdeck also made numerous acquisitions in the 1995 fiscal year:

- In December, the company acquired Inset Systems, Inc. for approximately 930,000 shares. Inset develops and markets graphics utility software products that

provide comprehensive graphic file management, high-quality conversions, and screen captures.

- In September, Quarterdeck acquired Berkeley (CA)-based StarNine Technologies, Inc., a developer of Web server technology for the Apple Macintosh platform, for 672,667 shares of common stock.
- Also in September, Quarterdeck acquired Prospero Systems Research for 150,000 shares. Prospero is the developer of InterRelay Chat technologies that enable live interaction and multimedia interactions via the Web.
- In August, the company acquired Internetwork, Inc., a developer of Internet software for Novell networks and development resources. Quarterdeck transferred 460,000 shares and enabled the company to add its IWare product line, which began shipping in September 1995.
- In June, the company acquired Landmark Research International Corporation, now renamed Quarterdeck Select, a utilities management software (MagnaRAM, WINProbe) and direct marketing provider, based in Clearwater (FL), for 3.5 million shares of common stock.

Quarterdeck also made strategic investments in the following companies during the 1995 fiscal year:

- Lernout & Hauspie Products NV, a developer of speech recognition technology for commercial applications

- Intelligence at Large, Inc., a developer of teleconferencing and collaborative computing technology

Employees

As of September 30, 1995, Quarterdeck employed 532 people worldwide.

Key Products and Services

In June 1996, Quarterdeck announced that it had instituted restructuring that consolidated all operations into two divisions: Utilities and Internet.

Utilities Division

The company's utilities products work to enhance the performance of personal computers running Microsoft Windows 3.x, Windows 95, Windows NT, and DOS.

The primary products in the utilities division are as follows:

- MagnaRAM 2 is a 32-bit program that combines data compression technology with a proprietary method for improving virtual memory speed. MagnaRAM provides more available Windows memory for Windows 95 and 3.x without having to add RAM chips. The product list price is \$39.95, but it can be ordered for \$29.95 from the Quarterdeck company home page.
- CleanSweep 95 is designed to enhance the performance of Windows by safely finding and removing outdated, unnecessary, or unwanted files, applications, and system components, thus freeing up disk space. Features include enhanced intelligence, full native support of a 32-bit file system, and the ability to collect programs and files and transport them from a desktop to a laptop computer, from one disk to another, across networks. CleanSweep 95 lists for \$39.95 and is available for \$29.95 at the company home page.
- WINProbe 95 is a troubleshooting toolbox designed to diagnose, optimize, and help clean-up any Windows system. WINProbe diagnoses the source of hardware and configuration problems through testing so users can determine the cause of hardware problems, and it provides optimization of memory and system resources. WINProbe 95's list price is \$59.95; \$44.95 if ordered via the Quarterdeck home page.
- QEMM 8 (Quarterdeck Expanded Memory Manager) is a memory manager for personal computers providing more available memory for Windows 95, Windows 3.x and DOS. QEMM's list price is \$99.95, or can be ordered directly from Quarterdeck via the company home page for \$64.95.
- SpeedyROM uses persistent cache technology to store frequently used information from CD ROMs to a special hard disk file, thus improving the speed of a user's CD ROM. SpeedyROM is available for \$39.95 from the Quarterdeck home page, or for its list price of \$59.95.
- HiJaak 95 integrates its graphics technology into the Windows 95 shell, and allows users to view, organize, convert, and print graphics without running a separate application. HiJaak 95's list price is \$90 and the product is also available for \$49.95 from the company Web site.
- Fix-It is software that automatically detects and corrects application conflicts, hardware configuration problems, and Windows environment problems. Fix-It supports over

1,000 applications, and includes an online directory of support contact information for hundreds of software and hardware manufacturers.

Internet Division

Quarterdeck's Internet division focuses on products and services relating to information management, communications/collaboration, and Web-enabling solutions.

The Internet Division includes the following products:

- *WebCompass* is a Web search device that allows automatic and simultaneous searches of multiple user requests. WebCompass uses multiple search resources and is fully compatible with all browsers and search engines. The product is commercially available for \$49.95.
- The *IWare Family of Products* is a line of products providing Internet access for Novell NetWare LANs. Currently available products in the IWare line are IWare Connect and IWare InternetSuite.
 - *IWare Connect* is an Internet and intranet access gateway software for NetWare LANs. It offers a security firewall, detailed reporting features, and installation with a single IP stack and address. IWare Connect is available at a 100-user license level for \$90 per concurrent user.
 - *IWare InternetSuite* is IWare Connect plus FTP, E-mail, news, Web, Telnet, and server-based installation and licensing for applications. InternetSuite has a list price of \$120 per concurrent user for a 100-user license.
- *GlobalChat* is real-time chat software that can be used from the Web. GlobalChat is a standalone program that works with a Web browser to provide live chat when connected to Global Stage or IRC servers. Currently, the client software can be downloaded for free from Quarterdeck's home page.
- *WebTalk* allows two-way voice conversations over the Internet by using a user's PC like a phone and transmitting over a regular phone line.
- The *PROCOMM* family of products provides access to Internet, fax, and data transmissions, including MCI Mail Manager, CompuServe Manager, and Host Mode, which allows a user to run a single-line bulletin board system. PROCOMM Plus 3.0 carries a list price of \$179, or \$129 if purchased directly from Quarterdeck.
- *Total Web* provides a complete Web publishing system, comprised of a Web authoring tool (WebAuthor Pro), image software (WebImage), InternetSuite 2, server software (WebServer for Windows 3.x), and a system control center (WebSTAR for Windows 95 and NT).
- *WebSTAR* for Macintosh is a Web server for Macintosh that allows the user to publish hypertext documents and multimedia from a desktop. WebSTAR provides control over multiple servers from one Macintosh machine. The product carries a list price of \$795, or \$499 from Quarterdeck.
- *TALKShow* is conferencing software that allows users to exchange and edit documents and graphics with multiple people on a real-time whiteboard

- *WebAuthor 2.0* allows conversion of existing documents from Word to HTML for the Internet. WebAuthor supports HTML 2.0 as well as Netscape extensions, and has a list price of \$69.95, or \$49.95 from the Quarterdeck home page.
- The *WebSTAR/SSL Security Toolkit* provides encryption support for creating a secure channel that prevents eavesdropping on Web connections. It allows users to publish hypertext documents and multimedia securely from a desktop. The product list price is \$895, or \$599 directly from Quarterdeck.
- *WebSTAR NT/95* is a 32-bit Web server for Windows NT and 95 that supports all popular Web browsers, authoring tools, image maps, CGI forms, and MIME.
- The *Quarterdeck InternetSuite* contains an assortment of Internet tools including Quarterdeck Mosaic, QFTP, and QTerm.
 - Quarterdeck Mosaic is a Web browser that lets a user view multiple documents at once, drag to hotlist folders, add notes to favorite sites, and recall viewed sites.
 - Quarterdeck File Transfer Protocol (QFTP) lets users copy files to their computer and transfer files to others.
 - QTerm, a Quarterdeck telnet connection program, lets users access a remote computer from anywhere in the world.
- *ListSTAR Listserver* is an automated E-mail processor for the Macintosh that allows users to create and maintain Internet-style mailing lists, automated E-mail response

systems, and direct mailing lists on the Internet and Macintosh E-mail systems.

- *Quarterdeck eXpertise* is PC X-Server software that lets a user's Windows PC run UNIX programs on a remote host.
- *Quarterdeck Mail* is a fully integrated messaging system for communicating to anyone on a user's network or the Internet.

Clients

A variety of companies and service providers use Quarterdeck products, including the following:

- Dell Computer preinstalls Quarterdeck's PROCOMM Plus 3.0 on its computers.
- Novell will use a Quarterdeck product that will enable Novell NetWare customers to access their internal Web servers via Novell's Internet Protocol eXchange (IPX) protocol.
- Global Village Communication, Inc. integrates Quarterdeck Mosaic 2 into its FocalPoint communications software for Windows 95 and Windows 3.1. Sales and Marketing

Sales and Marketing

Quarterdeck provides support for each of the components of its multiple distribution channels in a variety of ways:

The company supports its distributors and dealers by targeting end users directly through programs designed to create demand for its products, including:

- Worldwide advertising in industry magazines, local computer newspapers and trade journals

- Direct mail campaigns using customer response cards, sales brochures, and postcards
- Cooperative channel market development and promotional activities
- Trade show and user group participation

Quarterdeck's key account sales force educates corporate and government end users as well as dealers about the company's products.

The sales organization develops leads and introduces potential customers and corporate accounts to dealers in their geographic area.

The sales organization also provides basic product support and training directly to end users.

Quarterdeck sells its products to major software distributors for resale through software dealers. The company's principal distributors are Ingram Micro, Inc., Tech Data Corporation, and Merisel, Inc.

Additionally, the company distributes internationally through the foreign-based subsidiaries of Ingram Micro and Merisel, Inc. as well as through a variety of other international distributors.

Quarterdeck estimates that it has more than 35,000 distribution outlets selling its products worldwide, including computer superstores, office warehouse clubs, software specialty stores, consumer electronics stores, mass merchants, general warehouse clubs, and corporate resellers.

Alliances

Quarterdeck has developed and is continuing to pursue strategic partnering, licensing, and other relationships with leading telecommunications companies, Internet service providers, and other software and hardware companies with complementary resources and technologies.

A sample of the companies currently involved in some type of strategic relationship with Quarterdeck include Virgin Interactive Entertainment, Inc., Adobe Systems, Inc., InContext Corporation, Verity, Inc., Spyglass, Inc., and Infonautics Corporation, as well as the major U.S. and international Internet service providers (PSINet, UUNet, NETCOM).

Specific examples of Quarterdeck's strategic relationships include the following:

- Natural Intelligence and Quarterdeck have a strategic partnership to develop a Java machine plug-in for Quarterdeck's WebSTAR that will allow Java applets to execute on the server via the WebSTAR Server API.
- Hayes Microcomputer Products, Inc. and Quarterdeck have a strategic relationship in which Quarterdeck's InternetSuite 2 and WebTalk are bundled with the Hayes bps ACCURA consumer line of modems.
- JABRA Corp. and Quarterdeck have a strategic partnership that bundles JABRA's JABRA PC earpiece/microphone combination with Quarterdeck's WebTalk Internet voice communications package.
- Advanced Micro Devices and Quarterdeck have a strategic relationship whereby

Quarterdeck's WebTalk is offered to OEM customers for distribution with products based on AMD's InterWave audio signal processor chip.

- Search engine providers Infoseek Corp., Lycos, WebCrawler Corp., and Yahoo! Inc. filter advertisements residing at each provider's site through Quarterdeck's WebCompass Personal Edition.

Competition

Quarterdeck believes that the primary competitive factors in the personal computer software market are product features and performance, time to market, product reliability, ease of use, product and vendor reputation, price, timeliness of product upgrades, and the quality of customer support and service.

Quarterdeck's competitors include developers of operating systems, applications and utility software vendors, and personal computer manufacturers that develop their own software products.

The company's memory management and other utility products compete directly with the memory management and utility features of Microsoft Windows 95, Microsoft Windows 3.x and DOS, other third-party memory management products, and other utility software products.

Quarterdeck's telecommunications and collaborative computing products compete with other telecommunications and collaborative computing and other PC X Windows server products from other third-party software vendors. These products are frequently bundled with computer hardware as well as with operating system software.

Quarterdeck's Internet-related products compete with Internet access, creation, and server tools from a variety of companies, including Netscape Communications Corporation and other connectivity, networking, and Internet software application developers, Internet access providers, and other on-line service providers, as well as operating system vendors, including Microsoft and IBM.

INPUT Assessment

Quarterdeck's strengths include:

- Broad product line for both Windows and Macintosh platforms
- A position in the growing Internet communication market
- Consolidated company focus on two strategic business areas

Challenges in the future include:

- Integration of acquired companies and technologies
- Maintaining rapid pace of product production, development, and acquisition
- Solidifying company focus and commitment to a strategic business area
- Returning to profitability following a drastic third-quarter decline in 1996

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

December 1996

QuickResponse Services, Inc.

President & CEO: Tania Amochaev
1400 Marina Way South
Richmond, CA 94804
Phone: (510) 215-5000
Fax: (510) 215-3997

Status:	Public
Employees:	160 (12/96)
Revenue:	\$42,134,000
Fiscal Year End:	12/31/95

Key Points

- QuickResponse Services, Inc. (QRS) provides electronic commerce merchandise and logistics solutions to the retail demand chain.
- In October 1995, QRS expanded its offerings to include transportation and logistics services with the acquisition of ShipNet Systems, Inc.
- The company's newest suite of products—QRSolutions...—provides Windows-based solutions for the entire retail demand chain.

Company Description

QRS, founded in 1985, provides a range of network services designed to improve the flow of information, goods, and services throughout the retail demand chain to retailers and their suppliers.

The company's services include:

- The QRS Catalog, a centralized product information database
- Collaborative Replenishment Services
- Electronic data interchange (EDI) and network services
- Transportation and logistics services (Easy EDI and Logistics Management System)

Organization and Structure

QRS's key executives are summarized below:

QRS Key Executives

Name	Title
Tania Amochaev	President & CEO
Paul G. Benchener	VP Marketing
Stephen Brown	VP Sales
Shawn M. O'Connor	VP and CFO
John S. Simon	EVP

QRS is headquartered in Richmond (CA). An additional U.S. office is in Lisle (IL).

Company Strategy

During 1995, QRS positioned itself as a leading provider of electronic commerce merchandising and logistics solutions that optimize its customers' performance throughout the retail demand change.

QRS has aligned its applications closely with its customers' needs in three strategic areas:

- Procurement (QRS Catalog, EDI, and network services)
- Inventory management (QRSolutions...Replenishment, Sales Analysis, and Forecasting)
- Distribution management (Logistics Management Services)

QRS's strategy is to:

- Be the driving force in retail demand chain management
- Extend offerings to cover a greater portion of the demand chain

- Position the company to take advantage of the Internet as it develops to meet the needs of its customers

Financials

QRS's 1995 revenue reached \$42.1 million, a 34% increase over 1994 revenue of \$31.4 million. Net income was \$2.4 million, compared to \$14.0 million in 1994.

- Results for 1995 include \$4.3 million in charges for purchased in-process research and development associated with the acquisition of ShipNet Systems.
- Excluding the ShipNet acquisition, 1995 earnings before income taxes were \$8.3 million, up 38% over 1994.
- A five-year financial summary is shown on the following page.

Revenue growth in 1995 was attributed to four factors:

- The number of customers increased from 131 retailers and 3,692 vendors as of December 31, 1994 to 156 retailers and 4,865 vendors and carriers as of December 31, 1995.
- The number of catalog trading partnerships increased significantly as a result of the increase in the number of customers and their trading links with each other.
- Customers increased the number, type, and size of transactions transmitted over the network, as well as the use of The QRS Catalog.
- QRS expanded its product offerings by introducing Collaborative Replenishment Services and transportation and logistics services.

QuickResponse Services, Inc.
Five-Year Financial Summary
(\$ Thousands, except per-share data)

Item	Fiscal Year				
	1995	1994	1993	1992	1991
Revenue	\$42,134	\$31,382	\$22,457	\$13,253	\$6,692
• Percent change from previous year	34%	40%	69%	98%	144%
Income (loss) before taxes	\$3,961	\$5,980	\$1,911	\$(90)	\$(2,490)
• Percent change from previous year	(a) (34%)	213%	(b) *	96%	49%
Net income (loss)	\$2,387	\$13,965	\$2,589	\$(3,209)	\$(9,646)
• Percent change from previous year	(83%)	(c) 439%	181%	67%	(d) 49%
Earnings (loss) per share	\$0.28	\$1.67	\$0.43	\$(1.05)	\$(2.91)
• Percent change from previous year	(83%)	288%	141%	64%	48%

* Percent change exceeds 1,000%.

(a) Includes charges of \$4.3 million for purchased in-process research and development associated with the acquisition of ShipNet.

(b) Includes a \$1.4 million gain from the sale of certain software and services and a \$0.8 million extraordinary loss.

(c) Includes an \$8.0 million income tax benefit.

(d) Includes a \$7.2 million loss from discontinued operations.

Revenue Analysis by Product/Service

QRS derives its revenue from four principal and related sources:

- The transmission of standard business documents over a network
- Monthly charges for accessing The QRS Catalog
- Collaborative replenishment services-related fees based on the number of UPCs managed per store
- Logistics management and consulting services

Interim Results

Revenue for the nine months ending September 30, 1996 reached \$41.0 million, a 35% increase over \$30.4 million for the same period in 1995. Net income was \$4.6 million, up 32% from \$1.3 million for the same period a year ago.

Market Financials

QRS markets its services to retailers and their vendors, primarily in the U.S. and Canada.

The company's customer base increased 27% during 1995, from approximately 3,800 customers as of December 31, 1994 to approximately 4,900 customers as of December 31, 1995.

- As of December 31, 1995, QRS's catalog and EDI services were being used by 156 retailers representing all segments of the retail industry, with an emphasis in apparel and department store retailers.
- Customers also include approximately 4,330 general merchandise vendors selling a variety of goods ranging from apparel and shoes to cosmetics to electronics and automotive goods.

Geographic Markets

Virtually 100% of QRS's 1995 revenue was derived from the U.S. and Canada.

Acquisitions

In October 1995, QRS acquired certain assets and liabilities of ShipNet Systems, Inc. of Lisle (IL) for approximately \$4.9 million. The acquisition was accounted for as a purchase.

- ShipNet provides transportation logistics information and communications services to approximately 1,000 customers.
- ShipNet had approximately 20 employees at the time of the acquisition and annual revenue of \$2.5 million.
- With the acquisition of ShipNet, QRS is able to further integrate the functions required to identify, source, administer, track, and transport merchandise from the manufacturer through the transportation cycle and retail distribution until final purchase at point-of-sale.
- The operations of ShipNet have been merged into QRS.

Employees

As of December 31, 1995, QRS had approximately 120 employees.

The company currently has approximately 160 employees.

Key Products and Services

The QRS Catalog

The QRS Catalog is the retail industry's largest universal product code (UPC) database. It currently contains more than 44 million UPC entries from more than 1,500 manufacturers/vendors.

- Merchandise entries are classified by name, merchandise classification, style number, and UPC, as well as size, color, and other relevant characteristics.
- The UPC classification system underlies all subsequent transaction processing. When loaded into the database, the data is screened for accuracy and completeness by QRS's software and is further reviewed by a QRS customer support representative. Vendor information is protected, and is available only to trading partners approved by the vendor.
- Pricing of The QRS Catalog services is based on trading partnerships formed between vendors and retailers. Each time a retailer accesses a vendor's data in The QRS Catalog a trading partnership is formed and a specific fee is charged for that month. In addition to trading partnership charges, a usage fee is charged based on the actual number of records the retailer retrieves from The QRS Catalog.
- In 1996, QRS released QRSolutions...Catalog, a Windows-based version of The QRS Catalog which is designed to provide additional ordering information through the addition of 26 new data elements and increase user efficiency with new filtering techniques.

- The number of UPCs active in The QRS Catalog grew 28%, from 33.16 million as of December 31, 1994 to 42.52 million as of December 31, 1995.

Collaborative Replenishment Services (CRS)

QRSolutions...CRS is the company's suite of Windows-based network centric applications for inventory management based on individual manufacturer and retailer needs. It allows retailers and manufacturers to accurately track and replace inventory, as well as identify upturns and downtrends by stock keeping unit (SKU), category, and store location for planning the next season.

QRSolutions...CRS is composed of three products:

- QRSolutions...Replenishment provides customized solutions to retailers and manufacturers based on their particular replenishment needs. Acting as a focal point, QRS, in conjunction with the retailer and manufacturer, creates a series of models used to run inventory analyses. The retailer collects daily sales data by store, then sends it to QRS where the QRSolutions...Replenishment model is run and generates purchase orders. The order acknowledgment is sent by QRS to the retailer and a purchase order is sent to the vendor.
- QRSolutions...Sales Analysis is an inventory management tool that provides retailers and manufacturers with daily information about which products are selling, by size and color, and which should be discontinued.
- QRSolutions...Forecasting enables retailers and vendors to forecast sales for up to 53 weeks using seasonal and promotional input variables. It supports a variety of forecasting methodologies.

Transportation and Logistics Services

These services allow retailers, manufacturers, and carriers to track the movement of goods, tender, and track motor freight shipments via EDI, and provide delivery performance reporting.

The Logistics Management System (LMS) provides real-time availability of accurate shipping information and proactive notification of potential service failures, minimizing uncertainty surrounding individual orders and shipments. LMS offers three integrated systems:

- Electronic Traffic Management automates the tendering and pickup notice functions in the traffic department.
- Delivery Performance Reporting provides trading partners with delivery status information.
- Proactive Customer Service provides tracking and tracing and potential service failure notification on each shipment.

Easy EDI is a packaged solution that includes software and network services needed to transmit and receive any of the following EDI transaction sets in business document format: 204 Bill of Lading, 210 Freight Invoice, 214 Shipment Status, 990 Transaction Confirmation, and 997 Functional Acknowledgment. The 810 Invoice, 850 Purchase Order, and 856 Ship Notice Manifest will be added.

QRS also provides consulting professional services for retailers, manufacturers, and carriers in support of demand chain management.

EDI and Network Services

QRS's applications for Catalog, CRS, and transportation and logistics services reside

with QRS's data operations environment and are accessible primarily through the Advantis value-added network.

EDI services provide the vehicle for electronic communication to and from the QRS's network-centric applications.

- In addition to providing access to QRS demand chain management applications, EDI services enable retailers, vendors, and carriers to electronically exchange industry standard business documents, permitting communication of purchase orders, invoices, shipping notices, and other business documents.
- Access to the network is available via leased line or dial services.
- QRS also provides complete EC solutions that offer end-to-end services for doing business electronically, including communications software, a store and retrieval mailbox, EDI translation and management software, and implementation services.

Other network services provided by QRS include the following:

- E-mail services
- EDI to Fax, a service whereby QRS receives EDI documents from retailers and translates and faxes the documents to non-EDI enabled vendors
- Transaction Testing, a customized program that meets customers' EDI mapping specifications on in-bound documents, such as ASNs and invoices
- Carbon Copy, which provides customers with the ability to carbon copy Information Exchange (IE) EDI transactions to other

users on IE or other value-added networks. QRS sets up carbon copy tables for each customer; when the customer sends a single EDI transmission it is copied to the multiple recipients specified in the table.

- Internet connectivity through the QRSolutions Internet Access Kit, plus assistance to customers in establishing World Wide Web
- EConnect™, a PC/EDI Windows-based forms package to economically send and receive documents

Customer Service

QRS's customer service strategy is to provide retailers, manufacturers, and carriers with quick and easy development and implementation of their electronic commerce programs.

QRS provides its customers with a team of retail experts to oversee their programs and grow their businesses. This team consists of:

- Account Executives and Account Managers who focus on helping existing customers develop and implement EDI with their partners
- Electronic Commerce Representatives who support those programs through telephone contact with the partner companies
- Customer Support Representatives who are available 24 hours a day, seven days a week to answer customer questions and implement programs.

Clients

A sampling of QRS's retail clients includes Kmart Corporation, Dillards, Federated, The May Company, Price Costco, Sears, Spiegel, and Woolworths.

Marketing and Sales

In addition to its own sales force, QRS also benefits from the marketing efforts of Advantis and IBM.

- Advantis, in coordination with QRS, actively promotes the use of its network services in the retail industry.
- QRS cooperates with both Advantis and IBM marketing teams to generate leads and qualify prospects.

QRS's sales and marketing personnel include numerous individuals with prior retail, replenishment, transportation, and EDI experience.

QRS's marketing activities also include participation in industry conventions, trade shows, and user groups.

Alliances

QRS is an Industry Remarketer for the IBM Global Network.

In April 1996, QRS and Trade Service Corporation formed an alliance to develop an interface allowing music and video retailers to receive product information electronically via the QRSolutions...Catalog. This service will be known as PhonoLog EC.

Competition

QRS's major competitors include Sterling Commerce and GE Information Services.



COMPANY PROFILE

QUORUM LEGAL SYSTEMS (formerly Quorum Systems)

5165 Campus Drive
Plymouth Meeting, PA 19462
(215) 825-7500

William E. Baker, President
Subsidiary of ASA International
Total Employees: 85
Total Revenue, Fiscal Year End
12/31/90: \$8,500,000

The Company

Quorum Legal Systems provides processing services, software products, and turnkey systems to over 200 law firms and corporate legal departments for financial management, accounting, word processing, and litigation support. The company is an Authorized Distributor for DEC and an industry remarketer for IBM.

Quorum Legal Systems was founded in 1969 as Compute-R-Systems and was purchased by Control Data Corporation (CDC) in late 1984. Quorum operated as a division of CDC (as "Quorum Systems") until June 1991 when it was acquired by ASA International and renamed Quorum Legal Systems.

Quorum Legal Systems' competitors include The Minicomputer Company, CMS/DATA, CompuTrac, Elite, and Juris.

Key Products and Services

Quorum Legal Systems offers the following products and services for accounting and financial management:

- The Quorum Service Bureau is a batch processing service for timekeeping and billing information management. There are currently approximately 73 Service Bureau clients.
- Legal Advocate™, introduced in February 1991, is the company's open systems software designed to run on non-proprietary operating systems and multiple hardware platforms, including the full range of UNIX- and Intel-based personal computers and IBM's RS/6000.
- Legal Advocate addresses the requirements of the average law firm to generate reports, bills, and other documents formatted and tailored to the firm's specific needs.
- In addition to report generation, applications supported include timekeeping, client accounting, billing, accounts

receivable, transfers and adjustments, and client and matter inquiry.

- Legal Advocate is priced from \$9,000 to \$56,000 and there are currently six installations.
- Management Program 2000 (MP2000)TM is a DEC VAX-based financial management and reporting system that uses the INGRES relational data base management system.
- MP2000 is designed to help medium and large law firms manage day-to-day billing and overall financial performance.
- Applications supported include client accounting, general ledger, accounts payable, conflict of interest, docket control, and legal records management.
- MP2000 ranges in price from \$70,000 to \$500,000 and there are currently 26 installations.

Quorum's Desktop Integration Services helps law firms to integrate a variety of PC-based software packages with their existing hardware and operating systems.

- To implement a firm-wide office automation network strategy, Quorum starts with MS-DOS, MAC, OS/2, RISC/ULTRIX, or VAX/VMS platforms and uses DEC's PATHWORKS software to integrate WordPerfect for word processing, SoftSolution for document management, and other value-added applications such as electronic mail, personal calendars, and productivity tools.
- Quorum Legal Systems has provided these services for 37 installations.

Professional services provided include software modifications, disaster recovery, education, system capacity planning/tuning, maintenance, and consulting.

Industry Markets

Quorum Legal Systems' clients include law firms and corporate legal departments.

Geographic Markets

Approximately 98% of Quorum Legal Systems' 1990 revenue was derived from the U.S. and 2% from Canada.

**Computer
Hardware and
Software**

Quorum Legal Systems has the following computers installed at its data center in Plymouth Meeting (PA) for its processing services and software support:

- 1 DEC 8530, VMS
- 1 DEC 8350, VMS
- 2 DEC 785s, VMS
- 2 DEC 750s, VMS
- 1 DEC PDP-11/84, RSTS/E
- 1 DEC MicroVAX II, VMS
- 1 DEC MicroVAX 3600, VMS
- 1 Unisys 9080, VS9



COMPANY PROFILE

QUORUM SYSTEMS, A Control Data Company

5165 Campus Drive
Plymouth Meeting, PA 19462
(215) 825-7500

William E. Baker, President
Division of Control Data Corporation
Total Employees: 200
Total Revenue, Fiscal Year End
12/31/88: \$30,000,000

The Company

Quorum Systems provides processing services, software products, and turnkey systems to over 400 law firms and corporate legal departments for financial management, accounting, word processing, and litigation support. Quorum Systems is an Authorized Distributor for DEC and a value-added reseller for the Apple Macintosh.

- Quorum Systems was formed in April 1985 when Control Data Corporation combined the operations of Compute-R-Systems Inc. (founded in 1969 and acquired by CDC in late 1984) and Legal Support Services (a CDC organization specializing in litigation services).
- Quorum Systems operates as a division of CDC within Information Services Group's Data Services.

Quorum Systems' 1988 revenue reached \$30 million, an 11% increase over 1987 revenue of \$27 million. A three-year revenue summary follows:

**QUORUM SYSTEMS
THREE-YEAR REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR		
	1988	1987	1986
Revenue	\$30.0	\$27.0	\$26.0
• Percent increase from previous year	11%	4%	22%

Quorum Systems' operations are conducted through two divisions as follows:

- Automation Systems provides processing, software, and turnkey systems for financial management and word processing.
- Litigation Support provides software products for litigation support.

Quorum Systems' competitors include The Minicomputer Company, American Legal Systems, Atlas, CompInfo, and Aspen, as well as various IBM VARS.

Key Products and Services

Approximately 75% of Quorum Systems 1988 revenue was derived from turnkey systems (hardware and software sold together, 5% from application software products (software only), and 20% from batch processing services.

Quorum Systems offers the following products and services for accounting and financial management:

- The Quorum Service Bureau is a batch processing service for timekeeping and billing information management. There are currently approximately 109 Service Bureau clients.
- Management Program 1500 (MP 1500), available to clients as a software product or a turnkey system, is designed for DEC VAX computers. MP 1500 is used to track timekeeping and client accounting functions and produce various management reports.
 - MP 1500 software is priced from \$40,000.
 - There are currently over 40 MP 1500 installations.
- Management Program 2000 (MP 2000), available to clients as a software product or a turnkey system, is designed for DEC VAX computers. MP 2000 offers expanded timekeeping and client accounting capabilities through its use of relational database technology.
 - MP 2000 software ranges in priced from \$70,000 to \$500,000.
 - There are currently 14 MP 2000 installations.

- Optional software modules available for use with MP 1500 and MP 2000 include General Ledger, Accounts Payable, Docket Control, and Conflict Checking.

Word processing software available from Quorum Systems include the following:

- WordPerfect, from WordPerfect Corporation, is available for DEC VAX systems and IBM and compatible microcomputers.
- MASS-11, from Microsystems Engineering Corporation, is available for DEC's entire line of VAX computers running VMS and various IBM and compatible microcomputers running MS/DOS.

Litigation support products available from Quorum Systems include the following:

- BASIS, from Information Dimensions, Inc., is an interactive document retrieval and analysis system available for CDC CYBER; DEC VAX; IBM 3xxx and 43xx; and Prime 550, 2250, and 250 computers.
 - BASIS is priced from \$30,000.
- INMAGIC, produced by Inmagic Inc., is a litigation support/information retrieval product for IBM and compatible microcomputers and DEC VAX systems.
 - INMAGIC pricing starts at \$8,000.

Industry Markets

Quorum Systems' clients include law firms and corporate legal departments.

Quorum Systems has provided more than 400 customers, including 70 of the nation's top 500 law firms, with its software products.

Geographic Markets

Approximately 98% of Quorum Systems' 1988 revenue was derived from the U.S. and 2% from Canada.

Quorum Systems has offices in Plymouth Meeting (PA), Chicago (IL), Dallas (TX), Los Angeles and San Francisco (CA), Minneapolis (MN), New York City, and Rockville (MD).

**Computer
Hardware and
Software**

Quorum Systems has the following computers installed at its data center in Plymouth Meeting (PA) for its processing services and software support:

- 1 DEC 8530, VMS
- 1 DEC 8350, VMS
- 2 DEC 785s, VMS
- 2 DEC 750s, VMS
- 1 DEC PDP-11/84, RSTS/E
- 1 DEC MicroVAX II, VMS
- 1 DEC MicroVAX 3600, VMS
- 1 Unisys 9080, VS9

COMPANY PROFILE

QUOTRON SYSTEMS, INC.

77 Water Street
New York, NY 10005
(212) 898-7000

Thomas J. Cirillo, President and CEO
R. Max Gould, COO
Subsidiary of Citicorp
Total Employees: 1,600*
Total Revenue, Fiscal Year End
12/31/91: \$175,000,000*

*INPUT estimate

The Company

Quotron provides on-line financial information services via its international network to more than 60,000 PCs and/or terminals in 23 countries.

- In addition to real-time market data services, the company provides news services, branch office automation services, broker support software tools, analytics, financial data base services, network services, and a software development library. Quotron also provides and supports terminals, printers, and proprietary and industry-standard computer systems to its clients.
- Through Securities Industry Software Corporation (Wheat Ridge, CO), a subsidiary acquired in mid-1986, Quotron also provides processing services and turnkey systems for order management, brokerage accounting, and trading applications to brokerages.

Quotron has expanded from being a provider of U.S. retail equities quotes to an international equities, foreign exchange, and fixed-income systems and services integrator.

- The company is expanding the options available for accessing its network services, including proprietary delivery platforms, industry-standard 386 platforms, and UNIX-based platforms.
- Quotron's April 1992 introduction of Quotron Advantage AE marked a significant departure from Quotron's previous systems (the QUOTRON 800 and QUOTRON 1000) because it runs entirely on industry-standard hardware.

Company History

Quotron was founded in 1957 as Scantlin Electronics, Inc. In 1960, the company introduced QUOTRON I, the first electronic stock market data retrieval device, enabling market watchers to request reliable, real-time stock quotes from a desktop unit with a printed ticker.

- In the years that followed, Scantlin introduced various new technologies, including an electronic stock quotation board, the first data system allowing two-way communications for stock quotes, a system that converts ticker and teletype data to video, and programmable general-purpose office computers that consolidate real-time stock quotes with communications-oriented functions.
- In 1973, the company changed its name to Quotron Systems, Inc.

Quotron operated as a public company until June 1986 when it was acquired by Citicorp for \$19 per share, or a total purchase price of approximately \$680 million.

- Quotron had approximately 1,700 employees at the time of the acquisition and 1985 revenue of approximately \$205.7 million.
- Quotron now operates as a wholly owned subsidiary of Citicorp within Citicorp's Information Business unit.

Financials

INPUT estimates that Quotron's 1991 revenue (net of interest expenses) was approximately \$175 million, a 13% decrease from estimated 1990 revenue of \$200 million.

- Continuing revenue declines were attributed to difficult market conditions and increased competition.
- On an operating basis, Quotron was profitable until 1989. Most of its losses since then have been attributed to the amortization of the premium paid for its acquisition by Citicorp, along with a series of development programs to expand Quotron in Europe.
- During 1991, Citicorp took a \$430 million restructuring charge in its Information Business, which primarily includes the operations of Quotron. The restructuring charge is a write-off of assets related to older technology, software, and the costs of Quotron's acquisition.

**Acquisitions/
Divestitures**

In February 1990, Quotron acquired American Financial Systems Inc., a small Haverford (PA)-based firm whose flagship product is Broker's Notebook™, a PC-based portfolio management and prospecting system for retail stockbrokers.

During 1989, Quotron sold its hardware maintenance operations (with 600 employees) to Phoenix Technologies.

Major Alliances

In May 1992, Quotron and a consortium of ten major foreign exchange market-making Swiss, U.K., and U.S. banks formed the EBS Partnership and announced they have committed a total of \$45 million to fund the development and implementation of the Electronic Broking Service (EBS).

- EBS will offer screen-based broking facilities to foreign exchange dealers who would traditionally use voice brokers to maintain counterparty anonymity.
- Quotron was chosen to develop the service's technology based on its F/X Trader service. Availability is scheduled for early 1993.

In February 1992, Quotron and Desktop Data announced plans to jointly develop a tightly integrated link between Desktop Data's newly announced NewsEDGE/UNIX product and Quotron's Trading Support System on the same UNIX/Motif workstations and local-area networks.

In December 1991, Quotron and IBM signed a five-year agreement under which Quotron will migrate its financial information services, including the Quotron Advantage Services, and applications software from its proprietary computer system to IBM's RS/6000 hardware.

- A new Quotron Support Center in Uniondale (NY) managed and staffed by IBM provides customer service, installation, and support operations. As of May 8, 1992, all Quotron customers had been moved to the new center.
- IBM will also manage Quotron's nationwide communications network.
- Quotron continues to support services on its proprietary QUOTRON 800 and QUOTRON 1000 computer servers.

During 1990, Equinet Pty Ltd. became the exclusive agent for Quotron's services in Australia and New Zealand.

Also during 1990, Systex Corporation became the exclusive agent for Quotron in Taiwan.

Employees

As of December 1991, Quotron had about 1,600 employees. The company currently has about 1,600 employees.

Competition

Quotron's primary competitors include Automatic Data Processing, Reuters, and Telerate.

Key Products and Services

INPUT estimates that over 95% of Quotron's 1991 revenue was derived from processing/network services and associated equipment rentals. The remainder of revenue was derived from applications software products and professional services consulting.

Quotron supplies a range of on-line, real-time market data and support services to more than 60,000 terminals.

- On an average day, Quotron's network handles about 15 million quote requests and 2 million full-page news requests and carries 30 million automatic quote updates for its various monitor services.

Quotron Advantage ServicesSM are targeted primarily to the retail brokerage market. Network offerings are summarized in the exhibit and include the following:

- Market Data and Analytic Services provides real-time prices for more than 120,000 trading and investment instruments; news and market data on stocks, bonds, options, mutual funds, commodities, futures, and currencies from major exchanges, leading market-making firms, and interbank and foreign exchange dealers worldwide; and real-time analytical tools--from technical charts to pricing models to on-line calculations--to monitor price changes and market activity and support trading and investment decisions.
- In 1990, Quotron introduced F/X TraderTM, an IBM PS/2-based global interbank foreign exchange dealing system for the interbank market that allows traders to manage six simultaneous trading conversations with their counterparties. As of December 1991, F/X Trader was installed in over 200 bank trading rooms worldwide. By the end of April 1992, F/X Trader was installed in 300 bank trading rooms.

EXHIBIT

QUOTRON ADVANTAGE SERVICES

SERVICE OFFERINGS	SERVICE OFFERINGS
Market Data and Analytic Services - Quote Services - Monitor Services - Ticker Services - Class Display Services - News Services - Analytic Services - Intraday Graphs - Alert Manager - Programmed Indexes - Extended Option Class Display - Dynamic Option Class Display - Options Trading Strategist - Options Tracking and Analytics - Bond Calculator - Fixed Income Calculator - Quoteline Calculator	Decision Support Services - Argus Research - CDA Investment Technologies - CorporateWatch - Disclosure - Evans Economics - I/B/E/S - Innovest-STAR - The Market Guide - Markets Advisory - MoneyWatch - Munifacts - Optrack Plus (Track Data) - OTC NewsAlert - Pink Sheets - Quotron Symbol Guide - Standard and Poor's MarketScope - VESTOR - Vickers Holdings - Vickers Insider Trading - Wright Investors' Service - STAT-SCAN - Zacks Wall Street Forecasts
Branch Office Services - Broker Support System - Basic Branch Office Services - Spreadsheet - Word Processor - Quotron Blue Chip Series	
Workstation Services - PC Services for DOS - PC1000 - Local Database for DOS - Local Database API Tools for DOS - Broker's Notebook - PC Services for Windows - QuotTerm - QuotData - QuotChart - QuotHistory	Network Services - Computer Access and Report Service - Computer Access and Report Service Multiple Host Access - Order Entry and Routing Services - Broadcast Information Dispatch Service - Dynamic Billboard - Terminal Emulation - Foreign Terminal Emulation

- In August 1989, Quotron was awarded a contract to support the development and management of FXNET, a London-based interbank foreign exchange dealing settlement service originally developed by 12 money center banks. FXNET automatically implements bilateral netting and close-out agreements in foreign exchange dealings.
- Quotron first developed its presence in the foreign exchange marketplace in 1989 by introducing the Global Rate Report, a rates service that provides real-time fixed income, foreign exchange, precious metals, and oil prices.
- Decision Support Services provides on-line access to third-party business and financial reports, research, and market commentary to evaluate trading and investment decisions or to support sales recommendations.
- Branch Office Services are integrated office services in support of broker prospecting and portfolio management.
- Workstation Services include a range of services and applications for PCs that operate in DOS or Microsoft Windows to integrate real-time financial information from the network into custom and/or packaged applications, including Quotron's PC portfolio management system and real-time charting and analytics packages.
- Quotron's Open Windows family of products operate in the Microsoft Windows environment and include: QuotTermSM, which provides access to Quotron services through DOS-based PCs running Windows; QuotDataSM, which delivers real-time market data to a local data base in a PC that supports the DDE protocol; QuotChartSM, which provides PC-based access to real-time technical charts and analytic tools; and QuotHistorySM, which provides ten years of historical data on over 7,000 U.S. equities for graphing and analysis in QuotChart.
- Network Services include high-speed access to Quotron's services as well as to a variety of host computers, public data bases, and private networks via Quotron terminals or PCs.

Quotron offers several industry-standard and proprietary hardware systems for accessing Quotron Advantage Services.

- UNIX-based delivery systems include the QUOTRON 1000^R, a proprietary microprocessor-based multiuser branch office system

with analysis and office automation functions; the IBM PS/2; and the IBM RS/6000.

- Quotron Advantage AESM, introduced in April 1992, is a financial information system for the retail brokerage market consisting of the industry-standard IBM RS/6000 server, IBM PS/2s on the desktop, and an interface featuring different windows of services running under Microsoft Windows.
 - Advantage AE allows brokers to view multiple markets and perform multiple tasks simultaneously.
 - Microsoft Windows' DDE feature permits dynamic, real-time market data to be integrated into word processing, spreadsheet, and other analytical applications running in different windows.
- Quotron Advantage Services are also available over Quotron's Trading Support System (TSS), a family of products that provide a platform for receiving, processing, integrating, and distributing real-time information.
 - Based on an open systems architecture using UNIX servers and workstations--including Sun Microsystems, IBM, DEC, and NeXT--TSS processes and displays page-, news-, and record-based digital feeds from both Quotron and third-party vendors, passing data from the UNIX server to workstations via local-area networks using industry-standard protocols.
 - TSS also provides a set of Application Program Interfaces (APIs), allowing users to build proprietary applications with real-time market data from multiple data feed vendors.
 - One of the feeds TSS processes is the new Quotron Market Datafeed (QMDF). Originating at Quotron's National Data Center in Silver Spring (MD), QMDF covers real-time price and trade data on a variety of instruments traded on over 60 exchanges worldwide, including U.S. and international equities, options and commodities, market indices, and foreign exchange.
- The QUOTRON 800^R is a low-cost, proprietary communications computer that provides basic delivery of market data and communications without integrated applications support. Quotron's PC800TM software runs a PC into a multipurpose workstation for receiving market data from the QUOTRON 800 while also running PC applications.

- QUOTDIAL™ is an on-line, dial-up financial information retrieval service for home computer and personal business computer users. The service is generally used for staying in touch with the market at the office, at home, or while traveling.

Securities Industry Software Corporation (SIS), Quotron's wholly owned subsidiary, provides transaction processing services for integrated front- and back-office brokerage accounting applications. SIS systems update transaction and accounting records as trades occur to brokerage firms worldwide.

- Clients access SIS' data center in Lakewood (CO) via QUOTRON 1000 and QUOTRON 800 branch office systems or a variety of asynchronous or 3270-type terminals.
- SIS systems include the following:
 - The SIS Order Management System is an order entry system with administrative messaging capabilities.
 - The SIS Brokerage Accounting System fulfills all the accounting requirements of a full-service brokerage firm. Optional systems that can be added include a Cash Management System, a Self-Directed IRA System, and a Portfolio Management System.
 - SIS Trader is an on-line trading system tailored to specific trading areas, including equities, municipal bonds, government bonds, mortgage-backed instruments, and corporate bonds.
 - The On-line Offering System is an interactive, real-time system for the listing, reservation, and execution of product offerings. The system allows traders to compile and maintain a comprehensive, current listing of offerings that brokers can access from their own terminals.
- SIS currently has 40 service bureau clients and 11 clients running an in-house data base on SIS systems.

Quotron's Government Market Services provide on-line real-time trading prices for U.S. Treasury, Agency, and money market instruments, and municipal bond markets.

Quotron's Historical Data Services include the following:

- FAMER® software allows institutional investors to conduct research by integrating different data sources into a single data base for graphing and analysis.

- Quotron Historical Graphs is a service providing graphs and tabular reports of price and volume data since 1981 for over 7,000 U.S. equities and more than 150 equity indices.
- Citicorp Database Services provide economic and financial data.

Support services provided by Quotron include the following:

- Quotron offers an integrated family of tools, interfaces, and utilities for software developers to create or customize applications throughout all levels of Quotron delivery systems.
- The Professional Services Group provides customized financial applications and professional services to meet the specific requirements of individual clients.
- Through the Quotron Support Center, customers receive installation and support services for IBM RS/6000-based systems from IBM staff. Hardware maintenance for Quotron's proprietary systems is supplied by Phoenix Technologies.

Industry Markets

The majority of Quotron's revenue is derived from the banking and finance industry. Quotron's services are provided to brokerage firms, investment banks, commercial banks, savings and loans, insurance companies, exchanges, and corporations.

Recent client contract examples include the following:

- In June 1992, OTRA Clearing (a subsidiary of RKS Financial Group) selected SIS to provide brokerage processing and order routing systems under a multiyear service bureau contract.
- During 1992, Bidwell & Co. signed a multiyear service bureau contract with SIS for brokerage processing and order routing systems. The Feldman Investment Group signed a multiyear service bureau contract for brokerage accounting and order management systems.
- In January 1992, New York-based securities firm Donaldson, Lufkin & Jenrett signed a multiyear contract with Quotron for the continued use of the QUOTRON 1000 system and an enhanced set of broker support services and productivity tools.
- During 1991, SIS signed a multiyear contract with Corporate Management Group, parent company of J.W. Charles Securities, to provide brokerage processing and order routing systems, replacing the current vendor, ADP.

- During 1991, Quotron reached a multiyear agreement with PaineWebber to upgrade all branch offices to the QUOTRON 1000.
- During 1991, EJV Partners, L.P. selected Quotron's TSS to deliver real-time market information services to the financial services industry.

Geographic Markets

U.S. sales offices are located in Atlanta, Chicago, Dallas, Los Angeles, New York City, Haverton (PA), San Francisco, and St. Louis.

International offices are located in Australia, Austria, Belgium, France, Germany, Ireland, Luxembourg, the Netherlands, Switzerland, the U.K., Hong Kong, Japan, and Singapore.

Quotron also markets its services outside the U.S. as follows:

- Systex Corporation acts as Quotron's exclusive agent in Taiwan.
- Equinet Pty. Ltd. acts as Quotron's exclusive agent in Australia and New Zealand.

Computer Hardware and Software

The Quotron network central computer center is located in Silver Spring (MD). The system feeds data to Regional Computer Centers in New York City, Los Angeles, Atlanta, Chicago, Dallas, Philadelphia, San Francisco, and London. These sites, in turn, transmit or accept data from 50 concentrator sites located in North America, Europe, and Japan.

- The Silver Spring central computer center has QUOTRON 1000 and QUOTRON 800 proprietary systems installed, as well as IBM RS/6000 systems.
- The company also has proprietary QUOTRON systems installed at its other data centers.

COMPANY PROFILE

QUOTRON SYSTEMS, INC.

12731 West Jefferson Boulevard
Los Angeles, CA 90066
(213) 827-4600

J. David Hann, President and CEO

Subsidiary of Citicorp

Total Employees: 2,600

Total Revenue, Fiscal Year End

12/31/88: \$350,000,000*

*INPUT estimate

The Company

Quotron Systems, Inc., founded in 1957, provides on-line financial information services via its international network to more than 100,000 terminals in 23 countries.

- In addition to real-time market data services, the company provides news services, branch office automation services, broker support software tools, analytics, financial data base services, network services, and a software development library. Quotron also provides and supports terminals, printers, and proprietary computer systems to its clients.
- Through Securities Industry Software Corporation (Golden, CO), a subsidiary acquired in mid-1986, Quotron also provides processing services and turnkey systems for order management, brokerage accounting, and trading applications to brokerages.

Quotron operated as a public company until June 1986 when it was acquired by Citicorp for \$19 per share, or a total purchase price of approximately \$680 million.

- Quotron had approximately 1,700 employees at the time of the acquisition and 1985 revenue of approximately \$205.7 million.
- Quotron now operates as a subsidiary within Citicorp's Information Business unit.

According to Citicorp's 1988 Annual Report, Quotron's revenue (net of interest expenses) reached \$305 million in 1988, a 16% increase over \$262 million in 1987. INPUT estimates that Quotron's revenue before interest expenses was approximately \$350 million in 1988, compared to \$305 million in 1987.

- During 1988, the operations of Quotron, excluding acquisition costs to Citicorp, made a small operating profit. Operating expenses rose during the year largely as a result of Quotron's

overseas expansion, investments in brokers' back-office-related products, and other new product development efforts.

- During 1987, continuing investments in new securities-related products and expansion in international markets reduced Quotron's 1987 after-tax contribution to \$3 million from \$9 million in 1986.

During 1986, Quotron acquired the interests of its former partners -- the Associated Press and Dow Jones -- in AP-Dow Jones/Quotron Company, an international joint venture company formed in 1984 with DAFSA of France to provide access to the DAFSA data base of European securities and related information.

During 1986, subsequent to the acquisition of Quotron by Citicorp, a joint venture between AT&T and Quotron to develop an integrated financial information system was terminated.

Quotron's 2,600 employees are segmented approximately as follows:

Marketing/sales	350
Hardware maintenance	
(Customer engineering)	900
Software engineers	300
Manufacturing	550
General and administrative	500
	2,600

Quotron's primary competitors include Automatic Data Processing, Inc., Reuters, and Telerate.

Key Products and Services

INPUT estimates that over 95% of Quotron's 1988 revenue was derived from processing/network services and associated equipment rentals. The remainder of revenue was derived from application software products and professional services consulting.

Quotron supplies a range of on-line, real-time market data and support services to more than 100,000 terminals supported by more than 7,000 branch office computers and network processors.

- On an average day, Quotron's network handles about 15 million manual quotation requests and does another 40 million automatic quote updates for its various monitor services.

- The network also daily handles more than 1.7 million proprietary messages between brokers, and nearly one million requests for news and information from third-party data bases.

Quotron's network offerings are summarized in the exhibit and include the following:

- Market Data Services provide instant access to a range of market data, news, and statistics, including real-time transaction data on stock, bonds, options, mutual funds, financial futures, and commodities on exchanges around the world.
- Trading and Decision Support Services provide real-time analytical tools for evaluating trading activity.
- Branch Office Services provide applications for prospecting, portfolio analysis, and a family of office automation products.
- The Software Development Library contains software development tools for building customized applications with a consistent user interface.
- Financial Data Base Services provide a continuously expanding library of on-line research, including company reports, financial analyses, statistical data, and historical trends.
- Network Services include access to multiple host computers, public data bases, and private networks. Microcomputer services (PC800 and PC1000) allow a microcomputer to function as a Quotron terminal. Remote 800/1000 Services allow customers to receive Financial Data Services via a remote terminal over a leased line.

In August 1988, Quotron introduced its Research Distribution Service (RDS), a service that distributes highlights of morning equity research meetings at Goldman Sachs, Merrill Lynch, and Salomon Brothers, and dynamically displays continuous updates throughout the day. RDS is targeted to portfolio managers, analysts, and traders who use Quotron terminals and microcomputers at institutional firms worldwide.

Quotron offers the following hardware to its clients:

- Quotron's systems architecture centers on the QUOTRON 1000™, a multi-user UNIX branch office system with extensive networking capabilities based on the Motorola 68020 microprocessor.

EXHIBIT

QUOTRON SYSTEMS, INC.
NETWORK OFFERINGS

SERVICE OFFERINGS	SERVICE OFFERINGS
Market Data Services - Quote Services - Monitor Services - Ticker Service - Option Class Display Service - Commodity Class Display Service - Scrolling News & Headlines - News Retrieval Trading and Decision Support Services - Option Trading Information Service - Programmed Index - Commodity Trading Monitor - Bid/Ask Montage Service - Equity Transaction Service - Vickers Holdings - Intraday Graphs - Bond Calculator - Alert Manager Branch Office Services - Broker Support System - Spreadsheet - Quoteline Calculator - Quick Edit, Memo, Letter - Word Processor - List Merge/Processor - Electronic Mail - Phone List Software Development Library - C Interfaces - Forms Development Library - Virtual Terminal Emulator - UNIFY Data base management system - Context-Sensitive Help System - System Administration - Local Data Base	Financial Data Base Services - Equity Fundamental Research - Argus Research - Pershing Instant Comment - Standard and Poor's Marketscope - Wrights Investors' Service - Equity Technical Analysis - Innovest - Markets Advisory - Vestor - Informational Summaries - Disclosure - Pink Sheets - The Market Guide - Quotron Symbol Guide - Vickers Holdings - Vickers Insider Trading - Wall Street Estimates (Zacks Estimates) - Debt-Related Information - Corporatetwatch - Moneywatch - Munifacts - Telerate Cash Market Profile - Option Strategies - Technical Data Advantage Network Services - Computer Access and Report Service - Order Entry/Routing Services - Broadcast Information Dispatch Service - Dynamic Billboard - Terminal Emulation Service - PC800 - PC1000 - Remote 800/1000 Services - QUOTDIAL

- The QUOTRON 1000 delivers Quotron market data and applications to direct-connect or remote terminals, including serial and video terminals. It also acts as a file server to customer-owned intelligent workstations, which can run local applications or access QUOTRON 1000 host applications through terminal emulation.
- The QUOTRON 1000 can provide real-time marketed data from its local data base to a similar local data base facility on both UNIX and DOS workstations.
- Quotron has designed a tool kit for software developers who are customizing Quotron applications or writing their own on the QUOTRON platform. The development toolkit includes C compilers, data base management systems, windowing systems, forms managers,, debugging tools, library routines to access Quotron real-time market data, library routines to access external host systems via IBM 3270 Bisynch and SNA/SDLC, and built-in help routines for applications.
- The QUOTRON 800 Branch Office System, the predecessor to the QUOTRON 1000, has a proprietary architecture and supports the Quotron BOS operating system. There are currently over 7,000 QUOTRON 800 systems installed.
- Quotron also provides terminals and printers designed to operate with its QUOTRON 800 and QUOTRON 1000 systems.

For those customers who are using the QUOTRON 1000 to implement custom solutions, Quotron provides technical support for systems integration, consulting, and programming.

- Quotron also has facilities for testing customer-developed systems to ensure that they are properly integrated with standard Quotron services.

In September 1988, Quotron announced the Quotron Open Windows family of software applications that operate in the Microsoft Windows environment. The products offer Quotron's microcomputer customers the capability to integrate Quotron financial information services with off-the-shelf applications, such as the Microsoft Excel spreadsheet. The announcement demonstrates the company's commitment to support open computing environments by delivering real-time financial data to third-party hardware and software. The products are available individually or as an integrated package.

- QuoData™ enables users to create local data bases of Quotron real-time market data from the QUOTRON 1000 on a microcomputer for use with custom and off-the-shelf software.
- QuoChart™ is a real-time charting and technical analysis package.
- QuoTerm™, a terminal emulation application, permits quick access to all Quotron financial information services while allowing the user to view other applications on the microcomputer.

Securities Industry Software Corporation (SIS), Quotron's wholly owned subsidiary acquired in mid-1986, provides transaction processing services for order management, brokerage accounting, and trading to brokerage firms.

- Clients access SIS' data center in Lakewood (CO) via QUOTRON 1000 and QUOTRON 800 branch office systems or a variety of asynchronous or 3270-type terminals.
- SIS systems include the following:
 - The SIS Order Management System is an order entry system with administrative messaging capabilities.
 - The SIS Brokerage Accounting System fulfills all the accounting requirements of a full-service brokerage firm. Optional systems that can be added include a Cash Management System, a Self-Directed IRA System, and a Portfolio Management System.
 - SIS Trader is an on-line trading system tailored to specific trading areas, including equities, municipal bonds, government bonds, mortgage-backed instruments, and corporate bonds.
- SIS currently has over 50 service bureau clients and 15 clients running an in-house data base on SIS systems.

Industry Markets

The majority of Quotron's revenue is derived from the banking and finance industry. Quotron's services are provided to brokerage firms, investment banks, commercial banks, savings and loans, insurance companies, exchanges, and corporations.

Quotron clients include 15 of the top 20 U.S.-based retail brokerages and 19 of the top 20 trading firms.

Client contract examples include the following:

- In September 1988, Kidder, Peabody & Co., New York, signed a five-year agreement to install QUOTRON 1000 branch office systems in Kidder's 75 brokerage offices in the U.S.
- In April 1988, Quotron and its subsidiary, SIS, announced a joint contract to provide systems and services to all 32 offices of First of Michigan Corporation. The contract calls for the installation of 300 Quotron terminals on QUOTRON 1000 branch office systems, as well as access to SIS' software systems on a service-bureau basis.
- In March 1988, PaineWebber and Quotron announced a multi-million dollar agreement to install QUOTRON 1000 branch office systems and services in all 285 PaineWebber offices.
- In May 1987, Quotron signed a \$25 million, five-year agreement to provide financial information and support services to A.G. Edwards & Sons' 300 U.S. offices with its QUOTRON 1000 system.

Geographic Markets

INPUT estimates approximately 90% of Quotron's 1988 revenue was derived from the U.S. and 10% from international sources.

The company's international business has increased significantly since 1985. Such sales increased approximately 50% in 1986 and 33% in 1987.

U.S. sales offices are located in Atlanta, Chicago, Cincinnati, Dallas, Los Angeles, Miami, New York City, Philadelphia, Portland, San Francisco, and St. Louis.

International offices are located in Australia, Belgium, France, West Germany, Hong Kong, Luxembourg, The Netherlands, Switzerland, Japan, and the U.K.

Computer Hardware and Software

The Quotron network central computer center is located in New York City, with a back-up facility in Philadelphia. The system feeds data to eight Regional Computer Centers in New York City, Los Angeles, Atlanta, Chicago, Dallas, Philadelphia, San Francisco, and London. These sites, in turn, transmit or accept data from 46 concentrator sites around the world.

- The New York central computer center has QUOTRON 1000, QUOTRON 900, and QUOTRON 800 proprietary systems installed.
- The company also has proprietary QUOTRON systems installed at its other data centers.

FINANCIAL UPDATE TO PROFILE DATED AUGUST 1984*

QUOTRON SYSTEMS, INC.
5454 Beethoven Street
Los Angeles, CA 90066
(213) 827-4600

Milton E. Mohr, Chairman, President,
and CEO
Public Corporation, OTC
Total Employees: 1,700
Total Revenue, Fiscal Year End
12/31/85: \$205,686,000

QUOTRON SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1985	1984	1983	1982	1981
Revenue	\$ 205,686	\$ 189,799	\$ 153,810	\$ 120,918	\$ 88,120
• Percent increase from previous year	8%	23%	27%	37%	38%
Income before taxes	\$ 42,369	\$ 48,764	\$ 42,181	\$ 27,628	\$ 20,924
• Percent increase (decrease) from previous year	(13%)	16%	53%	32%	30%
Net income	\$ 22,068	\$ 26,823	\$ 23,981	\$ 17,035	\$ 12,485
• Percent increase (decrease) from previous year	(18%)	12%	41%	36%	40%
Earnings per share	\$ \$0.64	\$ 0.78	\$ 0.69	\$ 0.52	\$ 0.39
• Percent increase (decrease) from previous year	(18%)	13%	33%	33%	26%

- Quotron management attributes the slower rate of revenue growth during 1985 primarily to difficult conditions in the brokerage industry, the company's principal customer base.
 - Declines in net income were attributed to increases in depreciation of service equipment, a higher effective tax rate, and costs related to the introduction of the QUOTRON 1000 system.
- In March 1986 Citicorp announced it had made a proposal to buy Quotron for \$19 a share, or \$680 million. The offer is currently under consideration.

*Replaces Financial Update of September 1985

- In February 1986 Quotron and AT&T announced the signing of three contracts which formalize their joint association to market the Integrated Financial Information System (IFIS) for the financial services market.
 - IFIS is built around Quotron's market data, financial delivery network, the UNIX-based QUOTRON 1000, the AT&T UNIX PC, and AT&T's STARLAN local area network.
 - Users will be able to simultaneously view current market prices, hold a telephone conversation with a customer, retrieve a display of the customer's portfolio, and enter notes about the telephone conversation, as well as execute customer's orders to buy or sell.
 - The first customer for the IFIS system will be Shearson Lehman Brothers, Inc., a division of American Express. Pilot testing in branch offices will begin shortly, with production rollout scheduled for later in 1986.

SOURCE OF REVENUE

- One hundred percent of Quotron's 1985 revenue was derived from processing and associated hardware for the banking and finance industry, primarily brokerage houses.
- Merrill Lynch, Pierce, Fenner & Smith, Inc. (Merrill Lynch) continues to be Quotron's largest customer. Merrill Lynch accounted for \$52.4 million (25%) of 1985 revenue, \$50.6 million (27%) of 1984 revenue, and \$40.2 million (26%) of 1983 revenue.
 - In July 1985, Quotron signed an agreement with Merrill Lynch to continue to supply services through November 1988. Merrill Lynch also has been granted an option to be exercised in 1988 which would permit services to continue for an additional year.
- In May 1985, Herzfeld & Stern, a full-service brokerage firm, signed a 39-month agreement for market quotation services. Herzfeld & Stern has 11 offices located in New York, Florida, New Jersey, Pennsylvania, and Connecticut.

FINANCIAL UPDATE TO PROFILE DATED AUGUST 1984

QUOTRON SYSTEMS, INC.
5454 Beethoven Street
Los Angeles, CA 90066
(213) 827-4600

Milton E. Mohr, Chairman and President
Public Corporation, OTC
Total Employees: 1,725
Total Revenue, Fiscal Year End
12/31/84: \$189,799,000
Computer Services Revenue:
\$171,921,000

QUOTRON SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1984	1983	1982	1981	1980
Revenue	\$ 189,799	\$ 153,810	\$ 120,918	\$ 88,120	\$ 63,809
• Percent increase from previous year	23%	27%	37%	38%	35%
Income before taxes	\$ 48,764	\$ 42,181	\$ 27,628	\$ 20,924	\$ 16,075
• Percent increase from previous year	16%	53%	32%	30%	63%
Net income	\$ 26,823	\$ 23,981	\$ 17,035	\$ 12,485	\$ 8,909
• Percent increase from previous year	12%	41%	36%	40%	27%
Earnings per share (a)	\$ 0.78	\$ 0.69	\$ 0.52	\$ 0.39	\$ 0.31
• Percent increase from previous year	13%	33%	33%	26%	29%

(a) Restated to reflect a two-for-one stock split, effected in the form of a 100% stock dividend, in July 1983.

- Quotron management attributes the reduced growth rate in revenue and net income primarily to policies of consolidation and cost cutting within the brokerage industry.
- Revenue for the six months ending June 30, 1985 was \$99.3 million, a 9% increase over \$91.1 million for the same period in 1984. Net income for the period was \$11.5 million, compared with \$13.8 million in 1984.
- In June 1985 AT&T and Quotron announced an agreement to develop and sell a computer-based financial information system. The first customer for the

QUOTRON SYSTEMS, INC.

system will be Shearson Lehman Brothers, Inc., a division of American Express. Installation of the new system into 350 Shearson Lehman offices nationwide is scheduled to begin in early 1986.

SOURCE OF REVENUE

- One hundred percent of Quotron's 1984 revenue was derived from processing and associated hardware for the banking and finance industry, primarily brokerage houses.
- Merrill Lynch, Pierce, Fenner & Smith, Inc. (Merrill Lynch) continues to be Quotron's largest customer. Merrill Lynch accounted for \$50.2 million (27%) of 1984 revenue, \$40.2 million (26%) of 1983 revenue, and \$33.9 million (28%) of 1982 revenue.
 - In July 1985, Quotron signed an agreement with Merrill Lynch to continue to supply services through November 1988. Merrill Lynch also has been granted an option to be exercised in 1988 which would permit services to continue for an additional year.
 - In March 1984, IBM and Merrill Lynch announced a joint venture to develop a new financial information system. The system, if successful, would be a competitive product with Quotron's services. Quotron management cannot predict the impact of this development at this time.
- In May 1985, Herzfeld & Stern, a full-service brokerage firm, signed a 39-month agreement for market quotation services. Herzfeld & Stern has 11 offices located in New York, Florida, New Jersey, Pennsylvania, and Connecticut.

NEW PRODUCTS AND SERVICES

- During 1984 Quotron added four new data bases to its Financial Data Base Services library, bringing the total to 21 data bases.
 - The four new data bases are: Stewart Data, Cali College Financial Planner, Pershing Research, and Unlisted Market Guide.
- Quotron added information on Japanese securities to its Financial Information Services data base in early 1985.
- The Integrated Financial Information System, the joint development effort of AT&T and Quotron mentioned above, is built around the Quotron Q1000, the AT&T UNIX PC, and AT&T's STARLAN local area network.
 - Users will be able to simultaneously view current market prices, hold a telephone conversation with a customer, retrieve a display of the customer's portfolio, and enter notes about the telephone conversation, as well as execute customer's orders to buy or sell.

QUOTRON SYSTEMS, INC.

- Because the Integrated Financial Information System is made up of existing products, the system is currently available. Beta testing is in process in Shearson Lehman offices. An advanced version will be released in the second quarter of 1986.



COMPANY HIGHLIGHT

QUOTRON SYSTEMS, INC.
5454 Beethoven Street
Los Angeles, CA 90066
(213) 827-4600

Milton E. Mohr, Chairman and President
Public Corporation, OTC
Total Employees: 1,398
Total Revenue, Fiscal Year End
12/31/83: \$153,810,000
Computer Services Revenue:
\$140,867,000

THE COMPANY

- Quotron Systems, Inc., founded in 1957, provides on-line financial information services via a private nationwide and international data communications network.
- 1983 revenue reached \$153.8 million, a 27% increase over 1982 revenue of \$120.9 million. Net income rose 41%, from \$17 million in 1982 to \$24 million in 1983. A five-year financial summary follows:

QUOTRON SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1983	1982	1981	1980	1979
Revenue	\$ 153,810	\$ 120,918	\$ 88,120	\$ 63,809	\$ 47,415
• Percent increase from previous year	27%	37%	38%	35%	20%
Income before taxes	\$ 42,181	\$ 27,628	\$ 20,924	\$ 16,075	\$ 9,854
• Percent increase from previous year	53%	32%	30%	63%	51%
Net income	\$ 23,981	\$ 17,035	\$ 12,485	\$ 8,909	\$ 7,017
• Percent increase from previous year	41%	36%	40%	27%	57%
Earnings per share (a)	\$ 0.69	\$ 0.52	\$ 0.39	\$ 0.31	\$ 0.24
• Percent increase from previous year	33%	33%	26%	29%	N/A

- (a) Restated to reflect a two-for-one stock split, effected in the form of a 100% stock dividend, in July 1983.

QUOTRON SYSTEMS, INC.

- Quotron management attributes revenue increases to the installation of new systems and to the expansion of revenue from existing systems. Strong demands for new optional information services continue to be an important positive factor.
- Engineering, research, and development expenditures were approximately \$10.8 million, \$7.3 million, and \$5.8 million for 1983, 1982, and 1981, respectively.
- Revenue for the six months ending June 30, 1984, was \$91.1 million, a 28% increase over \$71.3 million for the same period in 1983. Net income for the period was \$13.8 million, as compared with \$11 million in 1983.
- Quotron has entered into various agreements/joint ventures as follows:
 - In May 1983 Quotron entered into an agreement with Telerate Systems, Inc. to offer a new optional service, Telerate Cash Market Profile.
 - Quotron now provides Telerate quotations and statistics on U.S. government securities, corporate bonds, and money market instruments over its network.
 - In June 1983 Quotron reached an agreement with BTSI, a brokerage service division of Control Data Corporation, to participate in a number of cooperative technical and marketing efforts.
 - BTSI provides securities-related processing services and software to the brokerage and banking industries.
 - In 1984 Quotron entered into a preliminary agreement with DAFSA of France, in conjunction with the Associated Press (AP) and Dow Jones, providing access to DAFSA data base of European securities and related information.
 - Quotron will be entitled to market the DAFSA data base in the U.S.
 - DAFSA will participate in the sales and marketing efforts for the AP-Dow Jones-Quotron service in its present European areas of activity.
 - Insurnet Inc., formed in 1980, is Quotron's cooperative venture with The Continental Corporation and American Information Development.
 - Insurnet, based in Emeryville (CA), provides processing and communications services to independent property and casualty insurance agents.
 - Quotron provides executive management, technical, and field support services to Insurnet. Quotron billed Insurnet \$3.5 million for the cost of these services during 1983.

QUOTRON SYSTEMS, INC.

- The Continental Corporation owns all of the common stock of Insurnet. Quotron and Information Development hold convertible preferred stock.
 - Assuming conversion, the common stock ownership of Insurnet will be 50% Continental Corporation, 37.5% Quotron, and 12% American Information Development.
 - Two years after the conversion Quotron will have an option to purchase the American Information Development shares at market value.
 - The operating results of Quotron will not be affected by Insurnet until after conversion of the preferred stock.
- During November 1982 Quotron sold 1,035,000 shares of its common stock in an underwritten public offering. Net proceeds of approximately \$29.3 million were used to repay a bank debt (\$6 million) and to purchase and improve a 10-acre site in Los Angeles to be used initially for research, development, and manufacturing, and ultimately for administrative offices and corporate headquarters.
- As of December 31, 1983, Quotron had 1,398 employees. The company currently has 1,638 employees, segmented as follows:

Marketing	83
Customer support	714
Computer operations	25
Software	175
Engineering and manufacturing	501
General and administrative	<u>140</u>
	1,638

- Quotron's primary competitors include the Bunker Ramo division of Allied Corporation and ADP-Financial Information Services.
 - On March 21, 1984, IBM and Merrill Lynch & Co. announced a joint venture to develop a system to deliver market quotation and financial data to IBM personal computers, which will be a competitive product to Quotron's Financial Information Services.

KEY PRODUCTS AND SERVICES

- Ninety-two percent of Quotron's 1983 revenue was derived from on-line processing and associated support services. The remaining 8% was derived primarily from hardware sales and related installation and maintenance fees.

QUOTRON SYSTEMS, INC.

- A three-year summary of source of revenue follows (\$ millions):

	1983		1982		1981	
	<u>Revenue</u>	<u>Percent of Total</u>	<u>Revenue</u>	<u>Percent of Total</u>	<u>Revenue</u>	<u>Percent of Total</u>
Processing Services	\$140.9	92%	\$110.4	91%	\$79.3	90%
Hardware sales and fee	<u>12.9</u>	<u>8</u>	<u>10.5</u>	<u>9</u>	<u>8.8</u>	<u>10</u>
Total	\$153.8	100%	\$120.9	100%	\$88.1	100%

- The Quotron 800 Financial Information Services System is a programmable computer system that provides instant access to market data, news, and statistical analyses on terminals in customers' offices.
 - Introduced in 1971, the QUOTRON 800 system uses a national high-speed, multichannel data transmission network that connects the main computer center in New York City with nine regional computer centers and data concentrations in 49 additional sites.
 - Quotron currently provides on-line financial information services to approximately 64,000 customer terminals in more than 5,700 locations in over 1,400 cities worldwide.
 - Typical customers include brokers/dealers, banks, savings and loan associations, and insurance companies as well as security, option, commodity and futures exchanges, and individual investors.
 - The average QUOTRON 800 customer has 21.7 terminals installed and spends in excess of \$2,450 per month for services.
- Quotron's Financial Information Services data base provides transaction and quotation information on over 35,000 stocks, bonds, options, mutual funds, and commodities reported on domestic, Canadian, European, and Far Eastern exchanges. Market statistics, dividends and earnings, industry group performance information, special graphs, business and economic news, and earnings forecasts are also available.
 - Sources of information include the following:
 - American Stock Exchange.
 - Boston Stock Exchange.
 - Chicago Board of Trade.
 - Chicago Mercantile Exchange.
 - Dow Jones.

- . International Commercial Exchange.
- . Kansas City Grain Exchange.
- . Midwest Stock Exchange.
- . Minneapolis Grain Exchange.
- . NASDAQ.
- . National Stock Exchange.
- . New York Cocoa Exchange.
- . New York Coffee-Sugar Exchange.
- . New York Commodity Exchange.
- . New York Mercantile Exchange.
- . New York Stock Exchange.
- . Pacific Commodity Exchange.
- . Pacific Stock Exchange.
- . Reuters.
- . Standard & Poor's.
- . Winnipeg Grain Exchange.
- During 1982 and 1983 Quotron added the following financial services offerings to its data base:
 - . Dow Jones News Stories from Toronto.
 - . American Stock Exchange Gold Coins.
 - . Over-the-Counter Dividends and Earnings.
 - . Contract Highs-Lows for Commodities.
 - . Dow Jones Bond Averages.
 - . Mid-America Commodity Exchange.
 - . Short-Term Treasury Notes.
 - . New Orleans Commodity Exchange.
 - . Domestic Refund Sugar.
 - . New York Silver Contracts, Sugar Options, and Gold Options.
 - . London Commodities.
 - . London Metals.
 - . London Financial Futures.
 - . Commodity Options.
 - . Montreal Stock Exchange Gold Coins.
 - . Foreign Currency Options.
- Recent service offerings introduced by Quotron include the following:
 - In September 1983 Quotron introduced the QUOTRON 1000 Financial Office Services System. QUOTRON 1000 is designed to offer customers a range of office services to support broker-related activities in addition to Quotron's on-line data base services.
 - . The QUOTRON 1000 features multiple Motorola 68000 16-bit microprocessors with a multiple bus structure that is expandable to support a range of peripherals - including 15-inch, high-resolution, high-scan-rate intelligent terminals; intelligent peripheral controllers; Winchester disk drives; tape drives; advanced broker keyboards; and letter-quality, line, and laser printers.

- During 1983 Quotron introduced application development tools for the QUOTRON 1000, including a data base management system, menu managers, a forms development library, a queuing system, and a virtual terminal emulator permitting simultaneous windowing capabilities on the user's display screen. User applications packages were also introduced for portfolio management, electronic mail, electronic spreadsheet, phone directory, and word processing. System software is based on the UNIX operating system.
- Beta testing of QUOTRON 1000 continued during early 1984. Introduction of the system into customer branch offices is expected during 1984. The QUOTRON 1000 will eventually replace the installed base of QUOTRON 800 systems.
- In July 1983 Quotron introduced Financial Data Base Services, a new line of services providing customers with real-time access to a library of on-line terminals and fundamental third-party data bases on their existing Quotron terminals.
- During 1983 a total of 17 data bases was made available, including Argus Research, Citicorp Economic Report, Disclosure, Innovest Systems Inc., Markets Advisory, Vickers Associates, Zacks Estimates, Wright Investors' Service, Future Scan News/Analysis, Corporatewatch, IMPACT 1040, Moneywatch, Munifacts, Technical Data, Wall St. Wizard, Standard and Poor's Market Scope, and Quotron Symbol Guide.
- In July 1983 the company introduced the QUOTDIAL Service, a dial-in service that allows personal computer and video display terminal users access to Quotron's financial data base.
- The on-line data base is available between the hours of 4:15 p.m. EST and 7:30 a.m. EST for a minimum monthly fee of \$50, based on level-of-service charges.
- QUOTDIAL will also provide access to the Financial Data Base Services information in August 1984.
- In August 1984 Quotron introduced Telerate Cash Market Profile, an on-line information service providing quotations and statistics on U.S. government securities, corporate bonds, and money market instruments.
- Other products/services available from Quotron that have been introduced during the last several years include the following:
 - The 90-Day News Retrieval Service enables the user to display current news and to retrieve categorized news stories as reported by Dow Jones.

QUOTRON SYSTEMS, INC.

- Customer Account Retrieval Services (CARS) permits subscribers to access their clients' accounts over Quotron's shared communications network. In 1982 Quotron upgraded the CARS network by installing a multiple Central network Switching Center in New York City.
- Billboard Information Dispatch Service (BIDS) permits customers to enter, store, process, retrieve, and geographically distribute large quantities of information using the Quotron terminal.
- The Satellite Office Terminal allows customers to receive Financial Information Services in remote offices and, if desired, to access the customer's own computer system.
- Quotron's Financial Information Service agreements with its customers vary from one to five years in length and provide for monthly billing. Recent contracts awarded to Quotron include the following:
 - In August 1983 Quotron agreed to supply its QUOTRON 800 Financial Information Services to an additional 140 Paine Webber, Inc. brokerage offices, raising the Paine Webber offices it serves to about 240. The three-year agreement is valued at more than \$30 million.
 - In May 1983 Bateman Eichler, Hill Richards, Inc. (a member of the Kemper Group) signed a multimillion-dollar, three-year agreement with Quotron for QUOTRON 800 Financial Information Services and customer account retrieval services.
 - In November 1982 Quotron entered into a definitive three-year agreement with Merrill Lynch to develop distributed files and communications-sharing Distributed Network Controller (DNC) services.
 - DNC services facilitate branch office access to both Quotron's market data services and the Merrill Lynch internal data bases, and allow Merrill Lynch's New York headquarters to transmit data directly to branch office terminals and printers.
 - This DNC network was providing full service to virtually all Merrill Lynch offices during 1983.
- Quotron currently has 57 field engineering offices in the U.S. staffed by more than 470 computer technicians and support personnel.
 - In 1983 Quotron organized the Systems Engineering support group to provide technical support for QUOTRON 1000 customers.

INDUSTRY MARKETS

- Quotron derived 100% of its 1983 revenue from the banking and finance industry. Brokerage houses are the major source of revenue, as reflected below.

Banking and finance	100%
Brokers/dealers	79.0%
Commercial banks	2.4%
Other	18.6%

- Merrill Lynch, Pierce, Fenner & Smith Inc. has been Quotron's largest customer, providing approximately \$40.2 million, \$33.9 million, and \$17.4 million of Financial Information Services revenue in 1983, 1982, and 1981, respectively.

GEOGRAPHIC MARKETS

- Virtually all of Quotron's 1983 revenue was derived from the U.S. Revenue from foreign operations have been insignificant during the past three years.
 - In April 1981 Quotron licensed The Associated Press to market Quotron Financial Information Services outside North America, Hawaii, and Puerto Rico. During 1983 communications concentrators were operating in both London and Hong Kong, and by year's end more than 20 systems had been installed in Britain and on the European continent. There are currently 66 customers.
 - The preliminary agreement with DAFSA, a French company, will expand the sales and marketing of the AP-Dow Jones-Quotron service in Europe.
- U.S. sales offices are located in Boca Raton (FL), Chicago, Cincinnati, Dallas, Los Angeles, New York City, Philadelphia, Portland, San Francisco, and St. Louis.

COMPUTER HARDWARE AND SOFTWARE

- Quotron designs and builds the Quotron 801 computer that is used in the Quotron 800 system. Installed in each customer's office is a Q801 computer running under a customized operating system and assembly language.
 - In 1981 the company introduced the Satellite Office Terminal which can be installed at a location remote from the host Quotron 800 and which receives information over a telephone line. Full Quotron 800 service is available from this terminal.
 - Quotron has developed the QUOTRON 901, a second generation computer to the 801 that increases the capacity of its data centers. During 1983 QUOTRON 901s were installed at the company's Regional

QUOTRON SYSTEMS, INC.

Computer Centers, at the Central Network Switching Center, and at the New York Computer Center. Each of the regional centers has Quotron 800 and 801s as well. Regional Computer Centers are located in Atlanta, Chicago, Dallas, Los Angeles, Miami, Philadelphia, San Francisco, Hong Kong, and London.

FINANCIAL UPDATE TO HIGHLIGHT DATED OCTOBER 1981

QUOTRON SYSTEMS, INC.
5454 Beethoven Street
Los Angeles, CA 90066
(213) 827-4600

Milton E. Mohr, Chairman and President
Public Corporation, OTC
Total Employees: 1,069
Total Revenue, Fiscal Year End
12/31/82: \$120,918,000
Computer Services Revenue:
\$110,436,000

QUOTRON SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

FISCAL YEAR ITEM	1982	1981	1980	1979	1978
Revenue	\$ 120,918	\$ 88,120	\$ 63,809	\$ 47,415	\$ 39,379
• Percent increase from previous year	37%	38%	35%	20%	18%
Income before taxes	\$ 27,628	\$ 20,924	\$ 16,075	\$ 9,854	\$ 6,510
• Percent increase from previous year	32%	30%	63%	51%	23%
Net income	\$ 17,035	\$ 12,485	\$ 8,909	\$ 7,017	\$ 4,470
• Percent increase (decrease) from previous year	36%	40%	27%	57%	(8%)
Earnings per share (a)	\$ 1.05	\$ 0.78	\$ 0.62	\$ 0.48	\$ 0.35
• Percent increase from previous year	35%	26%	29%	37%	N/A

(a) Restated to reflect an October 1982 two-for-one stock split.

SOURCE OF REVENUE

- Ninety-one percent of Quotron's 1982 revenue was derived from computer services.
 - Of the computer services revenue, 99% was from processing services and 1% from professional services.
 - Noncomputer services revenue was derived primarily from hardware sales and related installation and maintenance fees.

QUOTRON SYSTEMS, INC.

- The contribution of computer services revenue to total revenue for the past five years was as follows (\$ thousands):

ITEM \ FISCAL YEAR	1982	1981	1980	1979	1978
Services revenue	\$ 110,436	\$ 79,284	\$ 56,818	\$ 42,783	\$ 35,948
Percent of total revenue	91%	90%	89%	90%	91%

COMPANY HIGHLIGHT

QUOTRON SYSTEMS, INC.
5454 Beethoven Blvd.
Los Angeles, CA 90066
(213) 827-4600

Milton E. Mohr, President
Public Corporation, OTC
Total Employees: 858
Total Revenue, Fiscal Year
End 12/31/80: \$63,809,000
Computer Services Revenue:
\$56,818,000

PRINCIPAL BUSINESS

- Founded in 1957, Quotron Systems, Inc. provides financial information services and operates a private nationwide data communications network.

FINANCIALS (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1980	1979	1978	1977	1976
Revenues	\$63,809	\$47,415	\$39,379	\$33,353	\$24,643
• Percent change from previous year	35%	20%	18%	35%	52%
Income before taxes and extraordinary item	\$ 8,909	\$ 7,017	\$ 4,470	\$ 2,581**	\$ 1,328**
• Percent change from previous year	27%	57%	73%	94%	954%
Net income	\$ 8,909	\$ 7,017	\$ 4,470	\$ 4,850	\$ 2,792
• Percent change from previous year	27%	57%	(8%)	74%	746%
Earnings per share*	\$ 1.24	\$ 0.95	\$ 0.70	\$ 0.87	\$ 0.55
• Percent change from previous year	31%	36%	(20%)	58%	611%

* Earnings per share have been adjusted retroactively for a two-for-one stock split paid December 1, 1980, to stockholders of record on November 10, 1980.

** Income before tax benefit resulting from utilization of operating loss carry forward.

JOINT VENTURE

- In November 1980, Quotron, American Information Development, Inc., and The Continental Corporation jointly formed Insurnet, Inc. Insurnet, based in Emeryville, CA, acquired the business of American Information Development, Inc., which provides to independent insurance agents, data processing, word processing, marketing support, policy and claims processing, customer account storage and retrieval, and a communications interface to carriers.
- Continental Corporation will provide the joint venture with start-up debt financing. Quotron will provide executive management, technical and hardware support, communications design, and customer services and support.
- Initially the Continental Corporation will own all of the common stock of Insurnet. Quotron and American Information Development, Inc. receive convertible preferred stock.
 - Assuming conversion, the common stock ownership of Insurnet will be:
 - The Continental Corporation 50.0%
 - Quotron Systems, Inc. 37.5
 - American Information Development, Inc. 12.5
 - Quotron will have an option to purchase the American Information Development shares at market value.
- The operating results of Quotron will not be affected by Insurnet until after conversion of the preferred stock.

SOURCES OF REVENUE

- Eighty-nine percent of Quotron's FY 1980 total revenue is related to computer services. Of the computer services revenue, 93% is interactive processing (data base inquiry), 2% is derived from professional services, and 5% from a joint venture with American Telephone and Telegraph.
- The contribution of computer services revenue to total revenue for the past five years is as follows (\$ thousands):

	1980	1979	1978	1977	1976
Services revenue	\$56,818	\$42,783	\$35,948	\$30,239	\$20,503
Percent of total revenue	89%	90%	91%	91%	83%

EMPLOYEES

- Quotron's total employees are divided by function as follows:

QUOTRON SYSTEMS, INC.

Marketing	47
Customer support	353
Computer operations	33
Software	88
Engineering & manufacturing	272
General & administrative	<u>65</u>
	858

COMPETITORS

- Quotron's primary competition comes from Bunker Ramo and GTE Telenet Information Services, Inc.

PRODUCTS AND SERVICES

- The Quotron 800 Financial Information System is a programmable computer system which provides instant access to market data, news, and statistical analyses on terminals in customer offices.
 - Started in 1971, the Quotron 800 system uses a national high-speed, multichannel data transmission network that connects the main computer center in New York with regional computer center sites.
- Information transmitted to clients includes financial data from commodity, option, and stock exchanges in the U.S. and Canada, and from news agencies. The financial information contained in the data base falls into six categories: quotations, dividends and earnings, earnings forecasts, industry groups, market information, and market statistics. Sources of information include:
 - American Stock Exchange.
 - Boston Stock Exchange.
 - Chicago Board of Trade.
 - Chicago Mercantile Exchange.
 - Dow Jones.
 - International Commercial Exchange.
 - Kansas City Grain Exchange.
 - Midwest Stock Exchange.
 - Minneapolis Grain Exchange.
 - NASDAQ.
 - National Stock Exchange.
 - New York Cocoa Exchange.
 - New York Coffee-Sugar Exchange.
 - New York Commodity Exchange.
 - New York Mercantile Exchange.
 - New York Stock Exchange.
 - Pacific Commodity Exchange.
 - Pacific Stock Exchange.
 - Reuters.
 - Standard & Poors.
 - Winnipeg Grain Exchange.

QUOTRON SYSTEMS, INC.

- The average Quotron 800 customer has 14 terminals installed and spends in excess of \$2,000 per month for services.
 - Merrill Lynch, Pierce, Fenner & Smith Inc. is Quotron's largest customer accounting for approximately 18% of total FY 1980 revenues.
 - Other recent customer acquisitions include Dean Witter Reynolds and Charles Schwab & Co., Inc.
- The Billboard Dispatch Services (BIDS) was introduced in 1980 and allows for the customized creation of proprietary data bases. Co-existing with other Quotron FIS services, BIDS provides customers with a means to store proprietary information so that it may be accessed by account executives in branch offices.
- The Quotron VuSet is a joint venture with AT&T and allows such users as small offices, investment counselors, and private investors to have on-line access to the Quotron data base over dedicated telephone circuits.
 - Plantronics terminals are owned and maintained by AT&T, but marketed by Quotron.
 - There are approximately 1,300 VuSet installations. An average customer spends about \$260 per month which does not include an exchange fee.
- Professional service revenues (which contribute 2% to computer services revenues) are primarily generated by the creation of customized data base management and communications systems associated with Quotron's standard products.

INDUSTRY MARKETS Brokerage houses are the major source of Quotron's computer services revenues, as reflected below:

Banking and finance		95%
Commercial banks	5%	
Brokerage	85	
Other	5	
Insurance		<u>5</u>
		100%

GEOGRAPHIC MARKETS

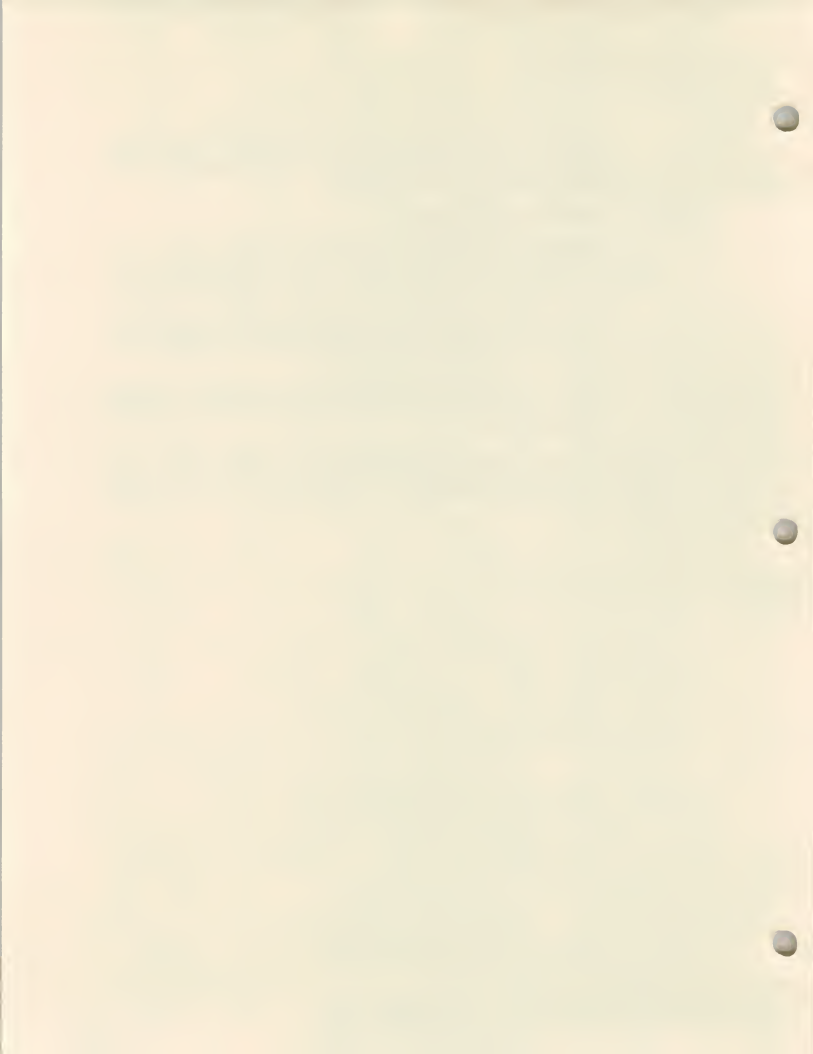
- Computer services revenues come primarily from the eastern U.S. The company does have installations of its system in London and Hong Kong. But foreign operations contributed an insignificant amount to computer service revenues.
 - In April 1981, Quotron announced a joint venture with Associated Press and Dow Jones & Co. for the international marketing of its financial

QUOTRON SYSTEMS, INC.

information service. The service will be marketed through AP-Dow Jones outside North America, Hawaii, and Puerto Rico. AP-Dow Jones will be responsible for maintenance and technical support. Quotron expects significant growth in this market.

COMPUTER HARDWARE AND SOFTWARE

- Quotron designs and builds the Quotron 801 computer which is used in the Quotron 800 system. There is installed in each customer's office a Q801 computer running under a customized operating system and assembly language.
 - In 1981, the company introduced the Satellite Office Terminal which can be installed at a location remote from the host Quotron 800 and which receives information over a telephone line. Full Quotron 800 service is available from this terminal.
 - In the fourth quarter of 1981, Quotron plans to introduce an advanced computer, Q901, which will provide expanded computing and communications capability.
- Quotron 801 computers are installed at the company's central computer center in New York. Each of the regional centers has a Quotron 800 system as well. Regional centers are in Philadelphia, Chicago, Miami, Dallas, Los Angeles, and San Francisco.



COMPANY HIGHLIGHT

QUOTRON SYSTEMS, INC.
5454 Beethoven Street
Los Angeles, CA 90066
(213) 398-2761

Milton E. Mohr, President and Chief
Executive Officer
Public corporation, OTC
Total employees: 530
Total revenues fiscal year end
12/31/77: \$33,353,384
Computer services revenues fiscal
1977: \$30,238,919

THE COMPANY

- Quotron Systems, Inc., was founded as a Delaware Corporation in 1957 to design and manufacture equipment and components used in remote computing. These included broad product lines ranging from components for mobil radio telephones to line amplifiers for American Telephone and Telegraph and its associated companies.
 - After about 1960 Quotron concentrated research and development activities on accessing remote data bases. The firm moved into the services business when it began to deliver stock market information to the brokerage industry.
 - Quotron then constructed a nationwide communication network which today is comprised of leased long-line, low-speed and high-speed local lines, with multiplexers and data concentrators in 42 cities throughout the United States.
- Today, Quotron's major business is the provision of financial information, such as stock quotations, to the financial community.
- Computer services revenues generated 91% of fiscal 1977 revenues of \$33 million. Direct sales (computer equipment primarily) were approximately \$3.1 million. Total revenues for fiscal 1978 are projected to reach \$38 million to \$40 million, based on the more than \$18 million revenues generated during the first half of the year.
 - About 3-4% of 1977 revenues were expended for research and development.
 - Income before tax and extraordinary items for fiscal 1977 was \$5,313,354. Net income was \$4,850,374, up 74% over 1976.
 - In 1975 Quotron contested the assessment of a utility tax in the state of New York. The appeals court reversed the decision of the lower court, and as a result, Quotron's fiscal 1977 financial statements reflected a \$1.1 million credit.
 - Traded over the counter, Quotron's stock price ranged from 3-1/2 to 5-3/8 during 1977.

August 1978

COMPANY HIGHLIGHT/QUOTRON SYSTEMS, INC.

- The following table summarizes Quotron's gain in financial strength over the past five years:

QUOTRON SYSTEMS, INC. Five Year Financial Summary (\$ thousand except per share data)

Item \ Fiscal Year	1977	1976	1975	1974	1973
Financial Information Services Revenues	\$30,239	\$20,503	\$13,462	\$11,775	\$9,353
Direct Sales (mostly hardware)	\$ 3,114	4,140	2,746	4,570	8,600
Total Revenue	\$33,353	24,643	16,208	16,345	17,953
Net Income (loss)	\$ 4,850	2,792	330	(1,918)	27
Net Income (loss) Per Share	\$ 1.75	\$ 1.11	\$ 0.16	(\$0.90)	\$ 0.01

- Management claims that Quotron now has about 37% of the financial information market and will have approximately 50% by the end of 1978. Other firms with significant market shares are General Telephone and Electronics, and Bunker Ramo.
- Quotron is heavily involved in regional exchanges for commodities and trading systems for options. Currently, the firm is involved in the developments for the National Market System (established by the Securities Exchange Commission).
- Some 530 employees are distributed by function approximately as follows:

Marketing and sales	21
Customer support and software services	160
Computer operations (includes quality control and quality assurance as well as some electronic testing)	249
General and administrative	<u>100</u>
	530

COMPANY HIGHLIGHT/QUOTRON SYSTEMS, INC.

KEY PRODUCTS AND SERVICES

- Remote computing services generated 95% of Quotron's 1977 computer services revenues. Professional services accounted for the other 5% of revenues.
- Remote computing revenues were derived as follows:
 - Data base inquiry 84%
 - Interactive 16%
- Quotron 800^R, Quotron's Financial Information Service (FIS) and major data base service, provides security quotations, analysis, and related information to the financial community.
 - The basic service is available for a monthly fee, which may vary depending upon optional features selected.
 - It includes hardware (including terminals), systems analysis and programming, field engineering, maintenance, and access to the data base which includes information from the following sources:
 - American Stock Exchange
 - Boston Stock Exchange
 - Chicago Board of Trade
 - Chicago Mercantile Exchange
 - Dow Jones
 - International Commercial Exchange
 - Kansas City Grain Exchange
 - Midwest Stock Exchange
 - Minneapolis Grain Exchange
 - NASDAQ
 - National Stock Exchange
 - New York Cocoa Exchange
 - New York Coffee-Sugar Exchange
 - New York Commodity Exchange
 - New York Mercantile Exchange
 - New York Stock Exchange
 - Pacific Commodity Exchange
 - Pacific Stock Exchange
 - Reuters
 - Standard & Poors
 - Winnipeg Grain Exchange
 - Options available to users of Quotron 800 produce about 30% of total FIS revenues. These options include:
 - Ticker displays
 - Selective ticker
 - Block trading monitor

COMPANY HIGHLIGHT/QUOTRON SYSTEMS, INC.

- Story recall
- Wire service new display
- Interoffice messages
- Electronic chalkboard
- QUOTETYPE
- QUOTEVUE
- QUOTEBOARD
- QUOTELIST (for security pricing and portfolio analysis)
- Vuset (terminal available from American Telephone for accessing Quotron's data base)
- The average Quotron 800 customer has 14 terminals installed and spends from \$18,000 to \$25,000 per year for the service and its options.
- The approximately 1,600 Quotron users include Merrill Lynch (which generates about 18% of revenues); Blyth, Eastman, Dillon & Co.; Salomon Brothers; The First Boston Corporation; Shearson, Hayden, Stone, Inc.; Smith, Barney, Harris, Upham & Co., Inc.; Lehman Brothers, Inc.; and most security exchanges.
- Interactive remote computing includes access to user controlled and maintained data bases and store and forward interoffice communications services.
- Professional services revenues are primarily generated by contract programming services. Most contracts are for customization of Quotron's standard products.

APPLICATIONS Approximately 84% of Quotron processing applications are derived from the sale of a financial data base: a specialty service. Remaining processing revenues are derived from utility and general business services.

INDUSTRY MARKETS Brokerage houses are the major source of Quotron's computer services revenues, as reflected below in the distribution of revenues in industry:

Banking and finance		95%
Commercial banks	5%	
Brokerage	85	
Other	5	
Insurance		<u>5</u>
		100%

COMPANY HIGHLIGHT/QUOTRON SYSTEMS, INC.

GEOGRAPHIC MARKETS

- Computer services revenues are primarily derived from the eastern U.S. as shown below:

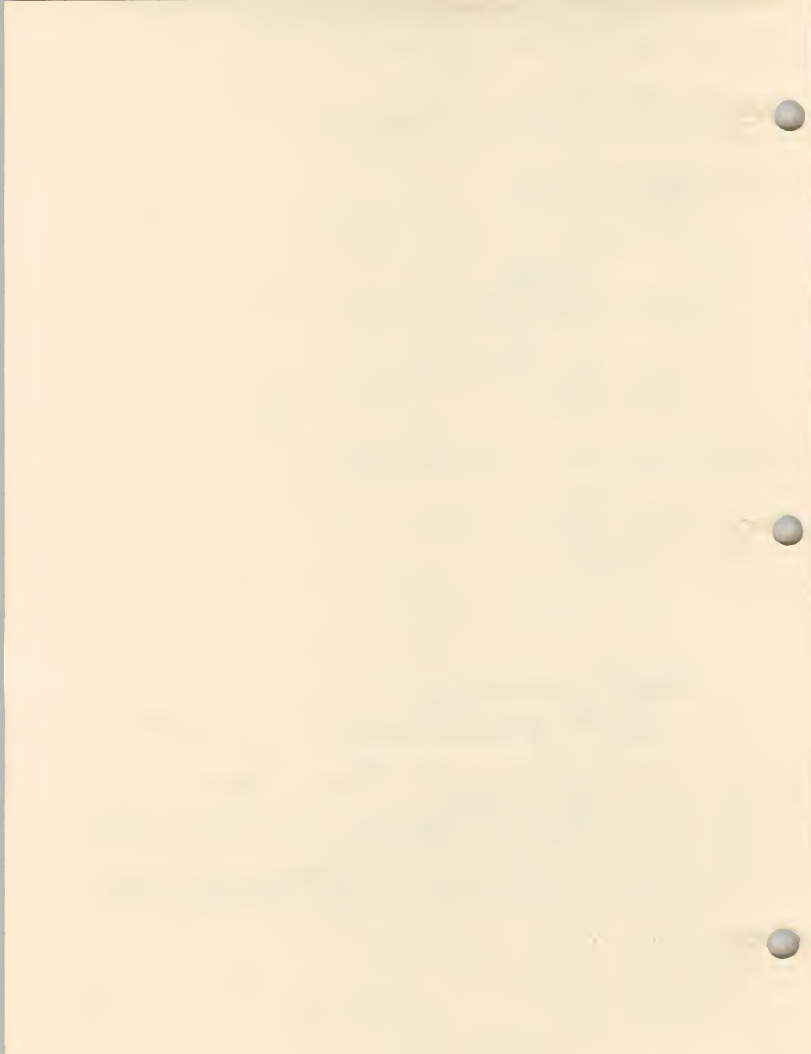
New England	10%
Middle Atlantic (New York mostly)	44
East North Central	16
West North Central	1
South Atlantic	7
East South Central	2
West South Central	4
Mountain	1
Pacific	<u>15</u>
	100%

- Sales offices are located in these cities:

- Boston
- Chicago
- Cleveland
- Dallas
- Los Angeles
- Miami
- New York
- Philadelphia
- St. Louis
- San Francisco

COMPUTER HARDWARE AND SOFTWARE

- Quotron has designed and built its own customized computer equipment, the Quotron 801. The original system, Quotron 800, was developed in 1971.
 - Over 2000 Quotron 801 computers are installed and run under a customized operating system and assembly language. Memory is 64K; words are 16 bits each.
 - Sixteen Quotron 801 computers are installed at the company's central computer center in New York. Each of sixteen regional centers has at least two of these computers.
- Transaction Technology, Inc., a wholly owned subsidiary of Citicorp, paid Quotron a one time license fee in 1971 for the use of its patents and systems.



Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

August 1996

Radnet, Inc.

President & CEO: Don Bulens
58 Charles Street
Cambridge, MA 02141
Phone: (617) 577-9422
Fax: (617) 577-9377
Internet: <http://www.radnet.com>

RAD·NET

Status: Private
Employees: 20 (7/96)
Fiscal Year End: 12/31/95

Company Description

Radnet, Inc. was founded in 1995 by former Lotus Development Corp. programmers to develop groupware products designed to build on the growing corporate intranet infrastructure.

The company develops groupware products that allow companies to use intranets and Web browsers for both internal and external communication.

In April 1996, Radnet introduced its first groupware product, WebShare™.

Organization and Structure

Radnet is headquartered in Cambridge (MA).

Key executives of the company are listed below.

Radnet, Inc. Key Executives

Name	Title
Don Bulens	President and CEO
Andrew L. Ressler	VP R&D and Chief Technical Officer
Reed P.M. Sturtevant	VP Sales and Marketing
Darlene A. Ressler	VP and COO
Steve Hochschild	VP Business Development

Company Strategy

Radnet was founded on the premise that the advent of corporate intranets and related standards-based technology provides an ideal platform for developing groupware applications based on linking a powerful server engine to any standard Web browser.

Radnet's mission is to offer powerful, easy-to-use groupware products that take advantage of intranets and Web browsers to meet the needs of organizations to improve productivity and share vital information.

Specific elements of the company's strategy include:

- Developing a "best-of-breed" platform for custom groupware applications
- Maintaining an open, modular architecture to coverage rapid advances in the Web market
- Focusing on VAR channels

Industry Markets

Any company that has a need for the information-sharing capabilities of groupware and that has a Microsoft NT server on its intranet is a target for Radnet's software. This includes workgroups and departments in Fortune 1000 companies.

In addition, WebShare can be used for project-based work teams who are geographically dispersed across different departments of a company.

Geographic Markets

Radnet plans to offer WebShare in the U.S. and worldwide.

Employees

Radnet currently has 20 employees, segmented as follows

Marketing and sales	5
Customer support	1
Research and development	10
General and administrative	4
	20

Key Products and Services

Radnet's first product, WebShare, is designed for internal corporate Web developers and Webmasters, independent software vendors (ISVs), and resellers building groupware applications for intranet and Internet deployment.

- WebShare provides the ability to create groupware applications that share document-oriented information—all from within standard Web browsers. As a result, large and small teams can share knowledge and expertise, keep track of items or issues, communicate across geographic and time boundaries, collaborate to solve problems, or keep team members updated on the status of projects.
- WebShare gives users access to product literature, sales presentations, diagrams, and photos stored in SQL databases. Documents are translated to HTML pages that look like applications. Access to document fields is controlled by user name and password.
- WebShare is based on open Web standards for communication protocols, security, document formats, programming languages and database storage, such as HTML, SMTP and SSL, Java and BASIC, and defacto standards such as MAPI and ODBC.

- WebShare runs on Microsoft Windows NT platforms, connecting users via a corporate intranet (any LAN running TCP/IP) or any public Internet network. Because WebShare's desktop access is based on any standard Web browser, such as Netscape Navigator or Microsoft Internet Explorer, supported client platforms include any that support standard Web browsers, including Windows 3.1, 95, or NT, Macintosh, or UNIX.

The WebShare family initially consists of three major components: the WebShare Server, the WebShare Designer, and the WebShare Starter Applications.

- The WebShare Server is an object-oriented groupware engine that stores the groupware applications of information, fields, scripts, user permissions, and all data about the application's state in order to manage its functionality.
 - The server is designed for high performance and runs continuously, which enables applications to pass information by the most efficient means and prevents developers from having to explicitly manage low-level groupware application functions, thus promoting rapid application design (RAD), prototyping, and deployment.
 - The WebShare Server lists at \$2,195.
- The WebShare Designer is a visual design tool that enables developers to customize Starter Applications or create new applications by designing the look and feel and defining the workflow and other parameters.
 - With the Designer, developers can build custom groupware applications, using the

integrated BASIC development language for programming.

- The WebShare Designer lists at \$995 per developer.
- The WebShare Starter Applications let users create groupware applications, and initially will include a threaded discussion database, a problem-tracking application and a document reference library, all of which may be customized as needed using the WebShare Designer.

WebShare pricing for the server license, which includes the Starter Applications, will be \$1,495 per server. Pricing for the WebShare Designer license will be \$695 per developer seat. There are no client license requirements or run-time fees.

The WebShare Server, WebShare Designer, and WebShare Starter Applications shipped in first commercial release in June 1996.

Customer Support

At first commercial ship, client support will be available through the Radnet Web site, where WebShare developers and users will be able to receive technical information or download software updates, demos, and sample applications.

Marketing and Sales

WebShare will be sold through several sales channels, including direct sales, via the Internet, and through VARs and distributors.

Upon commercial release, WebShare will be available for a 30-day free trial, downloadable from Radnet's public Web site.

Radnet sees WebShare as the core technology of a family of products it is planning for the intranet groupware market. Further

announcements of new products are expected in the third or fourth quarter of 1996.

Alliances

WebShare has alliances with Sybase and Spyglass.

Competition

Radnet's major competitors include Lotus Notes, Netscape Collabra, and a variety of products from Microsoft (Visual Basic, Microsoft Exchange, and Microsoft Web Server).

INPUT Assessment

Radnet's strengths include:

- Groupware experience of management team
- Relative ease of WebShare installation and integration
- WebShare's document-based model and Web-based groupware engine

Challenges in the coming months include:

- Product competition from major industry players
- Attracting converts from Notes and similar groupware products
- Developing a more expansive product line

RAILINC CORPORATION

50 F Street, N.W.
Washington, D.C. 20001
Phone: (202) 639-5500
Fax: (202) 639-5546

President:	Henry W. Meetze
Status:	Subsidiary
Parent:	Association of American Railroads
Total Employees:	130
Total Revenue:	\$18,700,000
Fiscal Year End	12/31/92

Key Points

- RAILINC[®], founded in 1982, provides network services including electronic data interchange (EDI) and industry data bases and software products to the transportation industry.
- RAILINC is a for-profit subsidiary, and marketing efforts are primarily directed at rail customers and suppliers.
- Network subscribers to RAILINC services include all major rail carriers, as well as manufacturers, distributors, and ocean and motor carriers.
- In 1992, RAILINC's revenue increased by 13%. This growth rate was almost double the growth rate RAILINC experienced in 1990 and 1991.

Company Description

RAILINC[®], founded in 1982, provides network services--including electronic data interchange (EDI) and industry data bases--and software products to the transportation industry. Clients include the major North American railroads as well as short lines, equipment leasing firms, shipper and rail industry suppliers, and government agencies.

RAILINC is the data processing subsidiary of the Association of American Railroads (AAR).

Strategy

RAILINC is a for-profit subsidiary and pursues business opportunities in rail and nonrail industries.

RAILINC is positioned more as a captive processing service for the railroad industry rather than a value-added network services vendor. Client satisfaction is high with the niche services RAILINC offers. RAILINC may face competition in the future from VAN providers as they seek to expand their services.

Financials

RAILINC's 1992 revenue of \$18.7 million includes approximately \$12 million from AAR and its members.

**RAILINC CORPORATION
FOUR-YEAR REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR			
	1992	1991	1990	1988
Revenue	\$18.7	\$16.5	\$15.3	\$14.2
· Percent increase previous year	13%	8%	8%	

Key Products and Services

Approximately 90% of RAILINC's 1992 revenue was derived from network services and 10% from software products.

RAILINC's network services include the following:

- The CLM Collection Service electronically collects Car Location Messages (CLMs) from most major rail carriers in North America and provides shippers with a single source of CLM information.

- The service is targeted to rail shippers with owned or leased fleets of any size, consignees, shippers' agents, and trucking companies.
- There are currently 50 users.
- The Data Exchange System consolidates car hire or car repair bills from over 230 railroads and provides them to rail car owners in computer-processible form.
- Over 90% of all car hire allowances and car repair bills are reported to RAILINC's Data Exchange System.
- There are currently over 200 users of the system.
- RAILINC's telecommunications network is currently used for EDI transmissions by over 400 clients, including rail carriers, manufacturers, ocean carriers, trucking companies, short lines, equipment-leasing firms, and government agencies.
- Documents frequently exchanged by subscribers include purchase orders, invoices, shipment tracing messages, bills of lading, freight bills, and administrative messages.
- Data bases maintained by RAILINC include the following:
 - TRAIN II[®] (Telerailed Automated Information Network) is an international freight car data base. TRAIN II collects information on freight car, trailer, and container movements across the U.S., Canada, and Mexico. Processing over 850,000 records per day, TRAIN II serves as the official source of interchange information for car hire calculation. There are currently over 150 subscribers to this service.
 - UMLER[®] is a computerized version of the Official Railroad Equipment Register. This data base contains information on the physical characteristics of more than 3 million registered freight cars, trailers, and containers.
 - The Reload Fleet Management service is a computerized railcar tracing and pool management service that automatically collects CLMs and TRAIN II data and locates the appropriate rail car for the next load using the shortest possible distance. There are currently seven clients using this service.

RAILINC offers several microcomputer software products for use with its network services. The products are available for IBM PC/XT, AT, PS/2 and compatible microcomputers and include the following:

- TRUMPS[®] offers electronic access to RAILINC's TRAIN II and UMLER data bases. Optional EDI capabilities permit the exchange of bills of lading, waybills, and administrative messages. There are currently 100 TRUMPS users.
- RAILINC also offers asynchronous and bisynchronous PC communications packages that permit companies to communicate with RAILINC's network.

Clients may access RAILINC's network via dial-in and dedicated leased lines.

Industry Markets

Marketing efforts are directed primarily at railroads and their trading partners.

Network subscribers include all major rail carriers.

Geographic Markets

All of RAILINC's revenue is derived from North America.

INPUT Assessment

RAILINC is primarily a captive processing service for the railroad industry rather than a full service value-added network (VAN) provider aggressively marketing across all industries. However, RAILINC occupies a specific niche that VAN providers may be interested in serving. RAILINC is well-managed and provides excellent service to its clientele.

COMPANY PROFILE

RAILINC CORPORATION

50 F Street, N.W.
Washington, D.C. 20001
(202) 639-5580

Henry W. Meetze, President
Subsidiary of Association of American
Railroads
Total Employees: 130
Total Revenue, Fiscal Year End
12/31/90: \$15,300,000

The Company

RAILINC[®], founded in 1982, provides network services--including electronic data interchange (EDI) and industry data bases--and software products to the transportation industry. Clients include rail, ocean, and motor carriers; manufacturers; and distributors.

RAILINC is the data processing subsidiary of the Association of American Railroads (AAR). RAILINC's 1990 revenue of \$15.3 million includes approximately \$8 million from AAR and its members.

RAILINC CORPORATION FOUR-YEAR REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR			
	1990	1989	1988	1987
Revenue	\$15.3	\$14.2	\$14.0	\$13.0
• Percent increase previous year	8%	1%	8%	N/A

Key Products and Services

Approximately 80% of RAILINC's 1990 revenue was derived from network services and 20% from software products.

RAILINC's network services include the following:

- The CLM Collection Service electronically collects Car Location Messages (CLMs) from most major rail carriers in North America and provides shippers with a single source of CLM information.
- The service is targeted to rail shippers with owned or leased fleets of any size, consignees, shippers' agents, and trucking companies.

- There are currently 70 users.
- The Data Exchange System consolidates car hire or car repair bills from over 95 railroads and provides them to rail car owners in computer-processible form.
 - Over 90% of all car hire allowances and car repair bills are reported to RAILINC's Data Exchange System.
 - There are currently over 200 users of the system.
- RAILINC's telecommunications network is currently used for EDI transmissions by over 400 clients, including rail carriers, manufacturers, ocean carriers, and trucking companies.
 - As a RAILINC subscriber, a customer can communicate electronically with any other subscriber--including rail, ocean, and motor carriers; manufacturers; and distributors.
 - Documents frequently exchanged by subscribers include purchase orders, invoices, shipment tracing messages, bills of lading, freight bills, and administrative messages.
- Data bases maintained by RAILINC include the following:
 - TRAIN II^R (Telerailed Automated Information Network) is an international freight car data base. TRAIN II collects information on freight car, trailer, and container movements across the U.S., Canada, and Mexico. Processing over 850,000 records per day, TRAIN II serves as the official source of interchange information for car hire calculation. There are currently over 100 subscribers to this service.
 - UMLER^R is a computerized version of the Official Railroad Equipment Register. This data base contains information on the physical characteristics of more than 3 million registered freight cars, trailers, and containers.
- The Reload Fleet Management service is a computerized railcar tracing and pool management service that automatically collects CLMs and TRAIN II data and locates the appropriate rail car for the next load using the shortest possible distance. There are currently seven clients using this service.

RAILINC offers several microcomputer software products for use with its network services. The products are available for IBM PC/XT, AT, PS/2 and compatible microcomputers and include the following:

- CLM/PC Tracing Software assists shippers in tracing rail shipments. CLM/PC collects CLMs through RAILINC's network and sorts and stores the information based on the requirements of the user. There are currently 20 installations of the software.
- CRB/PC, introduced in 1988, provides mechanized car repair billing procedures and electronic access to RAILINC's Data Exchange. There are currently 10 installations of the software.
- TRUMPS[®] offers electronic access to RAILINC's TRAIN II and UMLER data bases. Optional EDI capabilities permit the exchange of bills of lading, waybills, and administrative messages. There are currently 100 TRUMPS users.
- RAILINC also offers asynchronous and bisynchronous PC communications packages that permit companies to communicate with RAILINC's network.

RAILINC's Short Line Management System is a software product designed specifically for small rail carriers.

- The software automates general accounting and transportation accounting functions through the following modules, which may be purchased separately or as a complete system:

General Business:

- Accounts Payable
- Accounts Receivable
- Fixed-Assets Accounting
- General Ledger
- Inventory Control
- Payroll

Transportation:

- Car Hire Payables
 - Car Hire Receivables
 - Freight Bill Processing
 - Interline Freight Settlements
 - Waybill Tracking
 - Outbound Waybill Processing
- The software runs on IBM PC/XT, AT, PS/2, and compatible microcomputers.
 - There are currently 15 users.

Industry Markets

RAILINC is a for-profit subsidiary and pursues business opportunities in non-rail industries. Marketing efforts are directed primarily at rail customers and suppliers.

Network subscribers include all major rail carriers, as well as manufacturers, distributors, and ocean and motor carriers.

Geographic Markets

Virtually all of RAILINC's revenue is derived from North America.

Computer Hardware and Software

RAILINC maintains IBM computers at its data center in support of its various network services.

Clients may access RAILINC's network via dial-in and dedicated leased lines.

COMPANY PROFILE

RAILINC CORPORATION

50 F Street, N.W.
Washington, D.C. 20001
(202) 639-5580

Henry W. Meetze, President
Subsidiary of Association of American
Railroads
Total Employees: 130
Total Revenue, Fiscal Year End
12/31/89: \$14,200,000

The Company

RAILINC[®], founded in 1982, provides network services--including electronic data interchange (EDI) and industry data bases--and software products to the transportation industry. Clients include rail, ocean, and motor carriers; manufacturers; and distributors.

RAILINC is the data processing subsidiary of the Association of American Railroads (AAR). RAILINC's 1989 revenue of \$14.2 million includes approximately \$8 million from AAR and its members.

RAILINC CORPORATION THREE-YEAR REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR		
	1989	1988	1987
Revenue	\$14.2	\$14.0	\$13.0
• Percent increase previous year	1%	8%	N/A

Key Products and Services

Approximately 80% of RAILINC's 1989 revenue was derived from network services and 20% from software products.

RAILINC's network services include the following:

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- There are currently 70 users.
- The Data Exchange System consolidates car hire or car repair bills from over 95 railroads and provides them to rail car owners in computer-processible form.
- Over 90% of all car hire allowances and car repair bills are reported to RAILINC's Data Exchange System.
- There are currently over 200 users of the system.
- RAILINC's telecommunications network is currently used for EDI transmissions by over 300 clients, including rail carriers, manufacturers, ocean carriers, and trucking companies.
- As a RAILINC subscriber, a customer can communicate electronically with any other subscriber—including rail, ocean, and motor carriers; manufacturers; and distributors.
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- CRB/PC, introduced in 1988, provides mechanized car repair billing procedures and electronic access to RAILINC's Data Exchange. There are currently five installations of the software.
- EDI/SYNAPSE^R provides for the entry, transmission, receipt, and processing of data using ANSI, X12, TDCC, WINS, UCS, and most other EDI standards. There are currently 70 EDI/SYNAPSE installations.
- TRUMPS^R offers electronic access to RAILINC's TRAIN II and UMLER data bases. Optional EDI capabilities permit the exchange of bills of lading, waybills, and administrative messages. There are currently 100 TRUMPS users.
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RAILINC's Short Line Management System is a software product designed specifically for small rail carriers.

- The software automates general-accounting and transportation accounting functions through the following modules, which may be purchased separately or as a complete system:

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- General Ledger
- Inventory Control
- Payroll

Transportation:

- Car Hire Payables
- Car Hire Receivables
- Freight Bill Processing
- Interline Freight Settlements
- Waybill Tracking
- Outbound Waybill Processing

- The software runs on IBM PC/XT, AT, PS/2, and compatible microcomputers or the IBM System 36.
- There are currently 15 users.

Industry Markets

RAILINC is a for-profit subsidiary and pursues business opportunities in non-rail industries. Marketing efforts are directed primarily at rail customers and suppliers.

Network subscribers include all major rail carriers, as well as manufacturers, distributors, and ocean and motor carriers.

Geographic Markets

Virtually all of RAILINC's revenue is derived from North America.

Computer Hardware and Software

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COMPANY PROFILE

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50 F Street, N.W.
Washington, D.C. 20001
(202) 639-5580

Henry W. Meetze, President
Subsidiary of Association of American
Railroads
Total Employees: 125
Total Revenue, Fiscal Year End
12/31/88: \$14,000,000

The Company

RAILINC[®], founded in 1982, provides network services, including electronic data interchange (EDI) and industry data bases, and software products to the transportation industry. Clients include rail, ocean, and motor carriers, manufacturers, and distributors.

RAILINC is the data processing subsidiary of the Association of American Railroads (AAR). RAILINC's 1988 revenue of \$14 million includes approximately \$8 million from AAR and its members.

Key Products and Services

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- Waybill Tracking
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Network subscribers include all major rail carriers, as well as manufacturers, distributors, and ocean and motor carriers.

**Geographic
Markets**

Virtually all of RAILINC's revenue is derived from North America.

**Computer
Hardware and
Software**

RAILINC maintains IBM computers at its data center in support of its various network services.

Clients may access RAILINC's network via dial-in and dedicated leased lines.

COMPANY BRIEF

Primary Industry-Specific Market: Transportation

Railinc Corporation

1920 L Street N.W.
Washington, DC 20006
(202) 835-9400

CEO: Henry W. Meetze, President

Subsidiary of: Association of American Railroads

Noncaptive Revenue (12/31/86): \$1.1 million*

The Company:

- Railinc is a wholly owned data processing subsidiary of the Association of American Railroads (AAR), providing information and communications services including Electronic Data Interchange (EDI) services, industry data bases (statistics, rate information), customized software, and computer timesharing.
- Linkages to VANS and other network participants are also provided.
- Some EDI processing submitted to Railinc are transferred to Kleinschmidt (a remote computer service vendor with a focus on EDI services located in Deerfield, IL) at the customer's request to take advantage of more sophisticated report generators and other features not available on Railinc.

Key Products and Services:

- The two principal EDI products are SAM (Shipper Assist Message Service) for high-volume needs and CARLO (Car Location message Dial-In Service) for low volume needs. Both were developed by the AAR and the National Industrial Traffic League.
- Information exchanged covers car location messages (CLMs), waybills, administrative messages, and other messages between carriers and shippers. Transportation Data Coordinating Council (TDCC) standards and those developed by Railinc are supported.
- Direct, full-time 2,400-4,800 bps, bisynchronous (3780) protocol connections are supported for timely information transfers for SAM, and toll-free dial-in service is used for CARLO, a store and forward mailbox service.

*INPUT estimate

November 1986

- Most major rail carriers use these services and about 70% of interline waybills are exchanged on the network.
- Microcomputer communications software is available for IBM PCs and compatibles to allow communications with Railinc. Other developments planned include enhanced electronic mail (beyond the current short administrative messages now possible) and information on intermodal trailers and containers.

Target Industries:

- Since it is a for-profit subsidiary, Railinc can pursue business opportunities in non-rail industries, but efforts will be directed primarily at rail customers. For example, Railinc is testing the applicability of TRAIN to manage automobile inventories for U.S. automakers that maintain their own rail cars for transporting inventory between facilities.

November 1986

FINANCIAL UPDATE TO PROFILE DATED SEPTEMBER 1983*

RAND INFORMATION SYSTEMS, INC.

1201 Harbor Bay Parkway
Alameda, CA 94501
(415) 769-5800

Dale W. Darnley; Chairman, President,
and CEO

Public Corporation: OTC

Total Employees: 155

Total Revenue, Fiscal Year End

2/24/85: \$11,142,821

RAND INFORMATION SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	2/85	2/84	2/83	2/82	2/81
Revenue	\$ 11,143	\$ 12,694	\$ 14,164	\$ 15,935	\$ 15,481(a)
• Percent increase (decrease) from previous year	(12%)	(10%)	(11%)	3%	(18%)
Income (loss) before taxes	\$ (1,656)	\$ 2	\$ 376	\$ 1,768	\$ 375
• Percent increase (decrease) from previous year	(c)	(99%)	(79%)	371%	219%
Net income (loss)	\$ (1,256)	\$ 110	\$ 234	\$ 1,127	\$ 328
• Percent increase (decrease) from previous year	(c)	(53%)	(79%)	244%	290%
Earnings (loss) per share (b)	\$ (0.50)	\$ 0.04	\$ 0.09	\$ 0.43	\$ 0.12
• Percent increase (decrease) from previous year	(c)	(56%)	(79%)	258%	271%

- (a) Includes \$255,451 net gain on sales of subsidiaries and division.
- (b) Restated to reflect a one-for-three reverse stock split effective November 9, 1982.
- (c) Percent change exceeds 1,000%.

- Rand management attributes the further decrease in revenue and earnings to the continued difficulty in obtaining new system development business, to the loss of processing clients resulting from Rand's shift from in-house computing

*Replaces Financial Update of October 1984

RAND INFORMATION SYSTEMS, INC.

facilities to a remote networking environment, and to costs associated with the company's relocation from San Francisco to Oakland.

- In January 1984 the company, its Management and Employee Stock Ownership Trust, two of the outside directors, Computer Network Corporation (COMNET), and several other investors exercised the option they held to acquire 1,313,748 shares of the company's common stock from the Rand family. Such shares constituted 50% of the outstanding stock.
- In June 1984 Rand acquired all outstanding stock of Conversions, Inc. of Raleigh (NC) for \$400,000 cash and 60,000 shares of Rand common stock. Rand may be required to issue up to an additional 152,500 based on the performance of Conversion, Inc. through September 1987.
 - The acquisition was accounted for as a purchase and operations have been included since date of acquisition and contributed \$500,000, or 5%, of consolidated fiscal 1985 revenue.
- Revenue for the 12 weeks ended May 19, 1985 reached \$2.6 million, a 3% increase over revenue of \$2.5 million for the same period in 1984. Net loss for the period was \$308,000 compared to a net loss of \$47,000 for the same period the previous year.

SOURCE OF REVENUE

- Ninety-three percent of Rand's fiscal 1985 revenue was derived from professional services software development and conversions, the remaining 7% was derived from processing services, interest, and other corporate revenue. Revenue derived directly from foreign clients was \$600,000, or 5%, of total revenue.
 - In May 1984 Rand entered into an agreement with Computer Network Corporation (COMNET) whereby COMNET would provide remote computing services and telecommunications capabilities to Rand. COMNET services Rand's data processing needs from its Washington (DC) data center and offers some of Rand's products directly to customers using the COMNET telecommunications network.
 - This migration from an internal data center to a remote computing environment resulted in the loss of major clients. Residual business from this segment amounts to \$5,000 per month, and Rand does not intend to seek new processing services clients.
- New products and contracts announced during fiscal 1985 include the following:

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- EXITDOSTM, released during July 1984, is a software transformation package for DOS to MVS operating systems mainframe application program conversions. The package is priced at \$50,000.
- In August 1984 Rand entered into an exclusive agreement with Tenneco, Inc. to license the rights to Rand Development Center; a set of integrated software tools used in the design, coding, testing, and maintenance of application systems. The software was developed by Rand for Tennessee Gas Transmission, a division of Tenneco, Inc.
- In November 1984, through its subsidiary Conversions, Rand signed a contract with IBM providing IBM non-exclusive marketing rights to TRANSIT. The software product translates Honeywell, Univac, and Burroughs COBOL programs to IBM COBOL operating under IBM's MVS operating system. IBM has packaged the software under the name TRANSLATOR.
- In an agreement also announced in November 1984, Peat Marwick acquired the non-exclusive marketing rights to three of Rand's products: Rand Development Center, TRANSIT, and EXITDOSTM, and will also offer Rand support for the packages and any associated development work. The agreement will involve Peat Marwick's Information Systems Services group, a unit of the Management Consulting Department.
- Announced in July 1985 was a \$2.1 million extension to Rand's \$6.5 million contract with Compass Computer Services Inc. signed in December 1983 for developing a reservation system for Hilton Hotels.

*sold to
UCCEL*



Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

June 1996

RAILINC

Vice President: H.J. Randazzo
50 F Street, N.W.
Washington, D.C. 20001
Phone: (202) 639-5500
Fax: (202) 639-5546

Status:	Department
Parent:	Association of American Railroads
Employees:	130 (6/96)
Revenue:	\$29,000,000*
Fiscal Year End:	12/31/95

*INPUT estimate

Key Points

- RAILINC®, the information technology department of the Association of American Railroads, provides network services including electronic data interchange (EDI) and industry databases to the North American railroad industry.
- Network subscribers to RAILINC services include all major rail carriers, as well as rail suppliers, equipment lessors, government agencies, and shippers.

- Previously a for-profit subsidiary, RAILINC was reabsorbed into the nonprofit trade association in 1994.

Company Description

RAILINC, the data processing department of the Association of American Railroads (AAR), provides network services and software products to the railroad industry. Clients include the major North American railroads as well as short lines, equipment leasing firms, shipper and rail industry suppliers, and government agencies.

Organization and Structure

The parent company, the Association of American Railroads, is a policy, research, and technology organization with the mission of improving the safety and productivity of rail carriers.

- The AAR performs operations and maintenance, economics, and finance functions, as well as providing data systems, research, legislative affairs, public relations, and advertising.
- The AAR has approximately 67 members, 660 employees, and an annual budget of approximately \$65 million.

Company Strategy

RAILINC is positioned more as a captive processing service for the railroad industry than as a value-added network (VAN) services vendor. Client satisfaction is high with the niche services RAILINC offers.

Financials

INPUT estimates that RAILINC's 1995 revenue reached approximately \$29 million, a 14% increase over estimated 1994 revenue of \$25 million.

- Virtually 100% of RAILINC's 1995 revenue was derived from network services.
- All of RAILINC's revenue is derived from North America.

A five-year revenue summary is shown below.

RAILINC Corporation
Five-Year Revenue Summary
(\$ Millions)

Item	Fiscal Year				
	1995	1994	1993	1992	1991
Revenue	\$29.0	\$25.0	\$23.1	\$18.7	\$16.5
• Percent change from previous year	(a)	(a)			
	14%	9%	24%	13%	8%

(a) INPUT estimates

Employees

The RAILINC department currently has approximately 130 employees.

Key Products and Services

RAILINC's telecommunications network is currently used for EDI transmissions by over 600 clients, including rail carriers, manufacturers, ocean carriers, trucking companies, short lines, equipment-leasing firms, and government agencies.

- Documents frequently exchanged by subscribers include purchase orders, invoices, shipment tracing messages, bills of lading, freight bills, and administrative messages.

- The network currently switches more than one million messages per day among trading partners.
- Clients may access RAILINC's network via dial-in and dedicated leased lines.

Products and services provided by RAILINC include the following:

TRAIN II® (TeleRail Automated Information Network) is an international freight car database. TRAIN II collects information on freight car, trailer, and container movements across the U.S., Canada, and Mexico.

- Processing over three million records per day, TRAIN II serves as the official source of interchange information for car hire calculation.
- There are currently over 225 subscribers to this service.
- Interline Trace, a subsystem of TRAIN II, provides railroads with two methods of monitoring off-line shipments: parameter traces conducted as either a query on individual pieces of equipment, or via automatic generation of location messages based upon waybill information or car ownership.

UMLER® (Universal Machine Language Equipment Register) is a computerized version of the Official Railroad Equipment Register.

- This database contains information on the physical characteristics of more than three million registered freight cars, trailers, and containers.
- On-Line UMLER® provides TSO access to the UMLER edit and update system, enabling equipment owners to create transactions which will add, change, and delete UMLER records.

The RELOAD® Fleet Management service is a computerized rail car tracing and pool management service that automatically collects CLMs and TRAIN II data and locates the appropriate rail car for the next load using the shortest possible distance. This system, provides location, status, and ETAs. There are currently seven clients using this service.

The Data Exchange System is a family of systems that consolidates car hire or car repair bills from over 230 railroads and

provides them to rail car owners in computer-processible form.

- Data Exchange systems include Car Hire, Car Repair Billing, Interline Freight Revenue Settlement, National Freight Loss and Damage, and Interline Switching Settlement.
- Over 90% of all car hire allowances and car repair bills are reported to RAILINC's Data Exchange System.
- There are currently over 200 users of the system.

The Car Accounting Rate Distribution System (RAIL-CARDS) is a centralized computer system for managing the depreservation process.

- This system enables railroad equipment owners to identify which portions of their fleets they want to depreserve, allows owners and users to conduct bids and offer negotiations, and provides market rate data and reports.
- Rates negotiated through the Car Hire Rate Negotiation System (Depreservation) are stored in the Charm File, the North American Railroad industry's official source for mileage, time, and appurtenance rates applicable to freight cars, along with prescribed rates formerly contained in the UMLER rate master.

The Rate EDI Network (REN) is an independent system for electronically communicating prices among participating railroads and their authorized agents.

The REN Extension provides an automatic interface to the REN for railroads and their authorized agents who capture and maintain prices internally. This database also serves as

the repository for interline prices received from other carriers.

The National Rate Management System (NRMS) is a price management system which provides for the capture, maintenance, analysis, concurrence, and exchange of prices between rail carriers.

- RAILINC provides an interface between NRMS and the REN that allows NRMS to serve as the REN Price Source for its users.

Industry Reference Files (IRFs) are the North American Railroad Industry's official code table used to edit and ensure the quality of data reported by railroads to key industry systems, such as TRAIN II, RELOAD, the Interline Settlements System, the Rate EDI Network, and

RAILINC has discontinued in-house software development operations, and currently works with software vendors in the development of software products.

Clients

Network subscribers include all major rail carriers.

Marketing and Sales

Marketing efforts are directed primarily at railroads and their trading partners.

Competition

RAILINC may face competition in the future from VAN providers as they seek to expand their services.

INPUT Assessment

RAILINC is primarily a captive processing service for the railroad industry, rather than a full-service VAN provider aggressively marketing across all industries. However, RAILINC occupies a specific niche that VAN providers may be interested in serving. RAILINC is well managed and provides excellent service to its clientele.

Parent Company:

Association of American Railroads
50 F Street, N.W.
Washington, D.C. 20001
(202) 639-2100

FINANCIAL UPDATE TO HIGHLIGHT DATED SEPTEMBER 1983

RAND INFORMATION SYSTEMS, INC.
1201 Harbor Bay Parkway
Alameda, CA 94501
(415) 769-9000

Dale W. Darnley; Chairman, President,
and CEO
Public Corporation: OTC
Total Employees: 150
Total Revenue, Fiscal Year End
2/26/84: \$12,693,814

RAND INFORMATION SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	2/84	2/83	2/82	2/81	2/80
Revenue	\$ 12,694	\$ 14,164	\$ 15,935	\$ 15,481 (a)	\$ 18,985
• Percent increase (decrease) from previous year	(10%)	(11%)	3%	(18%)	19%
Income (loss) before taxes	\$ 2	\$ 376	\$ 1,768	\$ 375	\$ (316)
• Percent increase (decrease) from previous year	(99%)	(79%)	371%	219%	(128%)
Net income (loss)	\$ 110	\$ 234	\$ 1,127	\$ 328	\$ (173)
• Percent increase (decrease) from previous year	(53%)	(79%)	244%	290%	(121%)
Earnings (loss) per share (b)	\$ 0.04	\$ 0.09	\$ 0.43	\$ 0.12	\$ (0.07)
• Percent increase (decrease) from previous year	(56%)	(79%)	258%	271%	(122%)

(a) Includes \$255,451 net gain on sales of subsidiaries and division.

(b) Restated to reflect a one-for-three reverse stock split effective November 9, 1982.

- Rand management attributes the decrease in revenue and earnings from the previous year to difficulty in obtaining new system development business due to continued budget constraints of potential clients.

RAND INFORMATION SYSTEMS, INC.

- Rand's backlog of development and transformation business was boosted by a \$6.5 million contract signed in December of 1983 with Compass Computer Services Inc. (Dallas) to develop software for a reservation system for Hilton Hotels.
- In June 1984 Rand acquired all outstanding stock of Conversions, Inc., Raleigh (NC), for a combination cash and Rand common stock transaction. Conversion's primary product is a software conversion package, "TRANSIT," for mainframe COBOL-to-COBOL application conversions.
- Complementing "TRANSIT" is "EXITDOS", a DOS to MVS conversion package enabling DOS COBOL and Assembler language users to convert to MVS/SP or XA operating systems, which was released in July 1984.
- In August 1984 Rand acquired the rights to license Development Center software built by Tennessee Gas Transmission, a division of Tenneco, Inc., for which Rand was the major contractor.

SOURCE OF REVENUE

- Ninety-six percent of Rand's fiscal 1984 revenue was derived from computer services (89% professional services software development and 7% processing). The remaining 4% was derived from interest and other corporate income. A three-year summary of source of revenue follows (\$ millions):

ITEM \ FISCAL YEAR	1984		1983		1982	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Professional services	\$11.3	89%	\$12.8	90%	\$13.9	87%
Processing services	0.9	7	0.8	6	1.4	9
Interest and other income	0.5	4	0.6	4	0.6	4
Total	\$12.7	100%	\$14.2	100%	\$15.9	100%

- Approximately 89% of fiscal 1984 revenue was derived from the U.S. and 11% from international sales. Computer services revenues are primarily from the discrete and process manufacturing and insurance industries as well as federal government agencies and other industry sectors.

COMPANY HIGHLIGHT

RAND INFORMATION SYSTEMS, INC.

98 Battery Street
San Francisco, CA 94111
(415) 392-2500

E. Donald Shapiro, Chairman
Dale W. Darnley, President
Public Corporation, OTC
Total Employees: 201
Total Revenue, Fiscal Year End
2/27/83: \$14,164,100
Computer Services Revenue:
\$13,549,543

THE COMPANY

- Rand Information Systems, Inc., founded in 1964, develops custom on-line business systems and provides system conversion and processing services. In 1982 the company began offering applications software packages.
- Fiscal 1983 revenue was \$14.2 million, an 11% decrease from 1982 revenue of \$15.9 million. Net income declined 79% from \$1.1 million in 1982 to \$234,275 in 1983. A five-year financial summary follows:

RAND INFORMATION SYSTEMS, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	2/83	2/82	2/81	2/80	2/79
Revenue	\$ 14,164	\$ 15,935	\$ 15,481(a)	\$ 18,985	\$ 15,931
• Percent increase (decrease) from previous year	(11%)	3%	(18%)	19%	37%
Income (loss) before taxes	\$ 376	\$ 1,768	\$ 375	\$ (316)	\$ 1,110
• Percent increase (decrease) from previous year	(79%)	371%	219%	(128%)	1%
Net income (loss)	\$ 234	\$ 1,127	\$ 328	\$ (173)	\$ 817
• Percent increase (decrease) from previous year	(79%)	244%	290%	(121%)	(19%)
Earnings (loss) per share (b)	\$ 0.09	\$ 0.43	\$ 0.12	\$ (0.07)	\$ 0.32
• Percent increase (decrease) from previous year	(79%)	258%	271%	(122%)	(21%)

(a) Includes \$255,451 net gain on sales of subsidiaries and division.

(b) Restated to reflect a one-for-three reverse stock split effective November 9, 1982.

- Rand management attributes 60% of the decrease in fiscal 1983 revenue to the company's continuing difficulty in acquiring new systems development business. Management believes that this difficulty was due to budget restraints in force for many potential clients as a result of general economic conditions.
 - The remainder of the decrease in revenue was attributed to the processing services segment and reflects the loss of two of Rand's major clients during fiscal 1982.
 - Decreases in net income were due to a before-tax charge of approximately \$215,000 resulting from the settlement of an arbitration claim and software product research and development expenditures of approximately \$620,000. Research and development expenditures were immaterial in fiscal 1981 and 1982.

RAND INFORMATION SYSTEMS, INC.

- Revenue for the 12-week period ending May 22, 1983, was \$3.1 million, a 16% decrease from \$3.7 million for the same period in 1982. Net income for the period decreased 59% from \$129,641 in 1982 to \$52,875 in 1983.
 - Rand management attributes these declines to continuing difficulty in signing new systems development business.
- Rand is organized into three operational units as follows:
 - The Business Systems Division develops software packages and provides professional services for the development of on-line business systems.
 - The Transformation Services Division develops software packages and provides professional services for the conversion of existing computer applications systems to different hardware and software environments.
 - The Data Services Division provides processing services to customers throughout the San Francisco Bay Area as well as to Rand's internal production divisions.
- Rand has a minority interest in two European affiliates as follows:
 - Effective August 9, 1980, Rand sold 75% of its then wholly owned United Kingdom subsidiary, Rand Information Systems Ltd. As part of the sales agreement, Rand was given an option to reacquire 15% of this former subsidiary. In June 1982 Rand exercised its option and presently owns 40% of Rand Information Systems Ltd.
 - This affiliate provides systems conversion and other custom software services in Europe and received a significant portion of its revenue in the last two fiscal years through subcontracts from Transtec S.A.
 - Transtec S.A., Rand's 40%-owned French affiliate, provides systems conversion services in continental Europe.
- Effective July 17, 1981, Rand sold all of the assets and transferred all of the liabilities of its Rand Travel Services division to a private corporation owned by Rand's principal shareholders for \$72,799.
 - The division provided accounting processing services to travel agencies and had approximately 28 employees at the time of the sale.
- As of February 27, 1983, Rand had 201 employees. The company currently has 200 employees, segmented as follows:

Marketing/sales	10
Software services/customer support	150
Computer operations	20
General and administrative	<u>20</u>
	200

- Major competitors include Arthur Andersen, IBM, McDonnell Douglas Automation Company, Martin Marietta Data Systems, DASD Corporation, and Dataware, Inc.

KEY PRODUCTS AND SERVICES

- Ninety-six percent of Rand's fiscal 1983 revenue was derived from computer services (90% professional services and 6% processing). The remaining 4% was derived from interest and other corporate income. A three-year summary of source of revenue follows (\$ millions):

ITEM \ FISCAL YEAR	1983		1982		1981	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Professional services	\$12.8	90%	\$13.9	87%	\$10.8	70%
Processing services	0.8	6	1.4	9	4.3	28
Interest and other income	0.6	4	0.6	4	0.4	2
Total	\$14.2	100%	\$15.9	100%	\$15.5	100%

- The development of customized on-line business systems is one of Rand's major markets. A system is developed, tested, and installed for a fixed price and to a predetermined schedule. Rand's customized systems include the following:
 - CIDS (Comprehensive Industry Distribution System) controls product distribution and manages inventories by monitoring customer orders from receipt through shipment and invoicing.
 - System components include order processing, pricing, product availability, credit control, invoicing, audit control, resupply, traffic management, shipping documentation, stock transfers, and inventory status.
 - Rand's CARS (Comprehensive Accounts Receivable System) is available for integration with CIDS on client request.
 - Since 1974 CIDS has been installed at 23 client companies.
 - On-line order processing and distribution systems have been developed recently for Conoco Chemicals, Abbott Laboratories, and Scott Paper Company.

- CPS (Comprehensive Procurement System) supports the controlled procurement of raw materials, expense and supply items, service, and capital assets for multidivision, multilocation businesses.
 - Rand's CAPS (Comprehensive Accounts Payable System) is available for integration with CPS on client request.
- CMMS (Comprehensive Materials Management System) supports materials management functions from allocation of budget, through procurement, to receipt of the material by the requestor, and cost and inventory accounting.
- CMRP (Comprehensive Material Requirements Planning) System forecasts orders, defines production requirements, schedules production, and reports the status of manufactured products.
- CWMS (Comprehensive Warehouse Management System) supports such functions as receipt and putaway; picking, packing, and shipping; and warehouse inventory maintenance.
- CMS (Comprehensive Maintenance System) schedules and monitors plant maintenance work orders.
- CRRS (Comprehensive Rating/Routing System) forecasts freight charges based on specified routes and computes actual freight charges as compared to billed amounts.
- CPMS (Comprehensive Personnel Management System) maintains employee information and skills inventory information and supports wage/salary administration and benefits processing.
- Rand's second major business area is system conversion services, which Rand refers to as transformation services. Rand has provided professional services for the conversion and improvement of existing applications systems for operation in new hardware and software environments since 1968. This service involves helping a client plan for the conversion, preparing the programs and test data for conversion, translating and formatting the programs, unit and system testing of the converted programs, and installing the programs in the new environment.
 - Rand's hardware experience includes conversions from Burroughs, Control Data, Honeywell, IBM, ICL, NCR, Philips, and Univac equipment.
 - Rand's projects have used a variety of programming and assembly languages and higher level languages including COBOL, FORTRAN, PL/I, BASIC, RPG, SOAP, FARGO, SPS, Autocoder, BAL, ALC, COMPASS, PLAN, NEAT, NEAT3, Spectra ALC, 501 FAST, and EZCODE.

RAND INFORMATION SYSTEMS, INC.

- Conversion software, which includes several of Rand's tools used in the conversion process for analyzing, testing, formatting, cross-referencing, and updating, is also available to Rand clients.
- Work in progress includes:
 - A Honeywell-to-IBM conversion for New York Blue Cross/Blue Shield.
 - A COBOL-to-COBOL, Burroughs-to-IBM conversion for Argonaut Insurance Company.
- Rand provides batch, remote batch, and interactive processing services to San Francisco Bay Area users.
 - Rand supplies utility processing services using TSO, INTERACT, TCAM, JES2, IMS/VS, CICS/VS, SYNC SORT, FDR/DSF and COMPACTOR, UCCOI, EZREADER, ACF/VTAM, and CICS/ACF/NCP.
- In 1982 Rand began marketing applications software packages. The software runs on IBM and compatible mainframes operating under OS/MVS in a variety of data base environments including IMS DB/DC, DL/I, IDMS, and TOTAL. Software available includes the following:
 - CIDS-PAC, introduced in October 1982, is a packaged version of Rand's customized Comprehensive Industry Distribution System. It is priced at \$200,000.
 - CRMS (Comprehensive Railcar Management System), introduced in August 1982, maintains financial, tracking, and maintenance records on each railcar in a company's fleet. It is priced at \$75,000.
 - CFIPS (Comprehensive Freight Information and Payment System), introduced in May 1983, audits and analyzes freight bills to prevent duplicate and inaccurate payment. It is priced at \$90,000.

INDUSTRY MARKETS

- Rand's fiscal 1983 computer services revenue was derived primarily from the discrete and processing manufacturing and insurance industries as well as from federal government agencies and other industry sectors.

GEOGRAPHIC MARKETS

- Rand's fiscal 1983 computer services revenue was derived approximately as follows:

U.S.	76%
Europe	11
Canada	7
Mexico	<u>6</u>
	100%

- Sales offices are located in Bethesda (MD), Cos Cob and Milford (CT), Chicago, Dallas, San Francisco, and London.

COMPUTER HARDWARE AND SOFTWARE

- Rand maintains the following equipment at its San Francisco data center:

- 1 IBM 370/158-AP, MVS.
- 1 IBM 370/158, MVS.



COMPANY HIGHLIGHT

RAND INFORMATION SYSTEMS, INC.

98 Battery Street
San Francisco, CA 94111
(415) 392-2500

E. Donald Shapiro, Chairman
Public Corporation, OTC
Total Employees: 250 (10/30/80)
Total Revenues, Fiscal Year End
2/24/80: \$18,984,502

THE COMPANY

- Founded in 1964, Rand Information Systems, Inc. develops on-line business systems and provides system conversion and processing services to clients in the federal government and private sector.
 - The company's change in name from Brandon Applied Systems, Inc. was effective July 1978.
- FY 1980 revenues were \$18.9 million, a 19% increase over FY 1979 revenues of \$15.9 million. The loss before taxes and extraordinary item was \$316,000, and net loss was \$173,000. A five-year financial summary follows:

RAND INFORMATION SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ Thousands, Except Per Share Data) (FYE 2/24)

FISCAL YEAR ITEM	1980	1979	1978	1977	1976
Revenues	\$18,984	\$15,931	\$11,666	\$7,779	\$5,809
• Percent increase from previous year	19%	37%	50%	34%	—
Income before taxes and extraordinary item	\$ (316)	\$1,110	\$1,101	\$ 783	\$ (939)
• Percent increase (decrease) from previous year	(128%)	1%	41%	N/A	—
Net income	\$ (173)	\$ 817	\$1,011	\$ 823	\$ (961)
• Percent increase (decrease) from previous year	(121%)	(19%)	23%	N/A	—
Earnings per share	\$(0.02)	\$ 0.11	\$0.14	\$ 0.11	\$(0.13)
• Percent increase (decrease) from previous year	(118%)	(21%)	27%	N/A	—

COMPANY HIGHLIGHT/RAND INFORMATION SYSTEMS, INC.

- Income losses in FY 1980 were attributed to:
 - The high cost of completing several fixed-price conversion contracts in the first half of FY 1980.
 - A slow-down in the closing of new domestic conversion contracts.
 - Operating losses and write-offs of \$340,000 associated with the closing of the company's Australian subsidiary.
- Rand reported a net loss of \$131,747 on revenues of \$8 million for its first 24 weeks ending August 10, 1980. This compares to a net loss of \$826,598 on revenues of \$8.5 million for the same period in 1979.
 - Domestic operations for this period were profitable. Losses from British and Israeli operations amounted to approximately \$300,000.
- Rand is organized into three major operational groups:
 - The System Development Group provides professional services for the development of large-scale, on-line business systems and for the conversion of existing computer systems to new environments.
 - The Data Services Group provides processing services to customers throughout the U.S. as well as to Rand's System Development Group.
 - The International Group performs professional services for clients in Europe and the Far East.
 - Rand Information Systems Ltd. (RISL), an affiliate in Great Britain, specializes in systems conversion.
 - Transtec, S.A., a French affiliate headquartered in Paris, performs system conversion services.
- Acquisitions and sales completed by the company during the last two years were:
 - In April 1978, Rand and Compagnie Internationale de Services en Information (CISI), a French computer services firm, formed Transtec, S.A., a French professional services company. Rand invested \$86,600 for a 40% interest; CISI owns a 60% interest.
 - Also in April 1978, Rand and Elbit Computer Systems, Ltd., an Israeli computer manufacturer, established Elrand Information Systems Ltd., an Israeli systems development company. Rand invested \$11,600 for a 50% interest in Elrand; Elbit owns the other 50%. In September 1980, Rand announced that negotiations were being conducted for the disposition of its interest in Elrand.

COMPANY HIGHLIGHT/RAND INFORMATION SYSTEMS, INC.

- In June 1978, Rand acquired the net assets of Montgomery-McDonald, Inc. (MMI), a Los Angeles company supplying data processing services to casualty insurance companies and brokers. MMI became the Rand Insurance Systems division. In October 1980, Rand announced the sale of this division for \$137,500.
- On July 31, 1978, Rand increased its ownership of common stock in Deltanet, Inc., a dental claims processing company, from 80% to 100% for \$70,000. Deltanet was originally acquired in May 1977 from Health Application Systems, Inc., a wholly owned subsidiary of Bergen Brunswick, Inc. On November 24, 1980, Rand signed an agreement for the sale of Deltanet to the California Dental Service, Delta Dental Plan of Minnesota and Delta Dental Plan of Ohio for \$410,000.
- On April 1, 1979, Rand acquired the net assets of Specialized Computer Service for \$94,000. Renamed Rand Travel Services, the new division provides processing services to travel agencies.
- In September 1979, Rand discontinued the operations of Rand McDonald Systems Pty., Limited, an 85% owned Australian subsidiary. The company was formed in May 1977.
- In October 1980, Rand announced the sale of 75% interest in its British subsidiary, Rand Information Systems Ltd., for approximately \$397,000. Rand Information Systems Ltd. was established by Rand in 1976.
- Rand's 250 employees are segmented as follows:

- Marketing/sales	11
- Software/customer support	190
- Computer operations	29
- General and administrative	<u>20</u>
	250
- Major competitors to Rand include McDonnell Douglas Automation Company, Martin Marietta Data Systems, DASD Corporation and Dataware, Inc.

KEY PRODUCTS AND SERVICES

- Rand's FY 1980 revenues are divided as follows:

	Percent of total revenue (2/24/80)	Revenue value (\$ Millions)
Professional services	71%	\$13.5
Processing services	<u>29</u>	<u>5.4</u>
	100%	\$18.9

COMPANY HIGHLIGHT/RAND INFORMATION SYSTEMS, INC.

- The development of large-scale, on-line business systems is Rand's major U.S. market. Rand designs fully customized, interactive distribution systems using CIDS (Comprehensive Industry Distribution System) as the base for the clients' systems.
 - CIDS is an on-line, multifunction, order-processing and inventory control system. System components include:
 - Customer Order Processing.
 - Inventory Control.
 - Pricing.
 - Credit Control.
 - Requirements and Capacity Planning.
 - Sales Analysis.
 - Traffic Management.
 - Invoicing.
 - Based on a system developed by Standard Oil of California, CIDS has been marketed by Rand since 1973. The system is developed, tested and implemented for a fixed price and to a predetermined schedule.
- Rand has also developed a series of other on-line systems for business that may be customized and integrated with CIDS or a client's existing systems.
 - CAPS (Comprehensive Accounts Payable System) is designed to verify operating costs, depreciate capital assets and monitor tax payments. CAPS encompasses all activities from vendor invoice entry to bank account reconciliation.
 - CARS (Comprehensive Accounts Receivable System) supports all facets of invoicing and recording of payments and produces analytical management reports for use in measuring the overall effectiveness of the accounts receivable system.
 - CPS (Comprehensive Procurement System) supports the controlled procurement of raw materials, expense and supply items, service and capital assets for multidivision, multilocation businesses.
- On November 16, 1979, Rand announced the signing of four contracts totaling over \$5.6 million, for the development of the following on-line, order-processing and distribution systems based on CIDS:
 - An improved order-processing, shipping control, inventory-record-keeping, pricing and invoicing system for E.I. DuPont de Nemours & Company, which will be implemented in early 1981.
 - An order-processing system developed for Abbott Laboratories supporting domestic distribution of pharmaceutical and hospital products.

COMPANY HIGHLIGHT/RAND INFORMATION SYSTEMS, INC.

- A requirements study for an on-line order processing system for the Conoco Chemical Division of Conoco, Inc.
- A definition of requirements for an on-line distribution system for Mostek Corporation, a manufacturer of integrated circuits and electronic subsystems.
- In June 1980, Rand signed a contract to develop an order-processing, equipment configuration and invoicing system for a Northern California manufacturer of microwave transmission and receiving systems. Final implementation is scheduled for August 1981.
- Rand has provided professional services for the conversion of existing systems to new hardware and software environments since 1968.
- Rand provides batch, remote batch and interactive processing services. Industry-specific applications include the Travel Agency Computer System (TRACS), which automates the accounting functions of travel agencies and produces management reports. TRACS performs five major functions:
 - ATC and Financial Accounting.
 - Accounts Receivable.
 - Customer Deposit Accounting.
 - Sales Analysis.
 - Payroll (optional).

INDUSTRY MARKETS

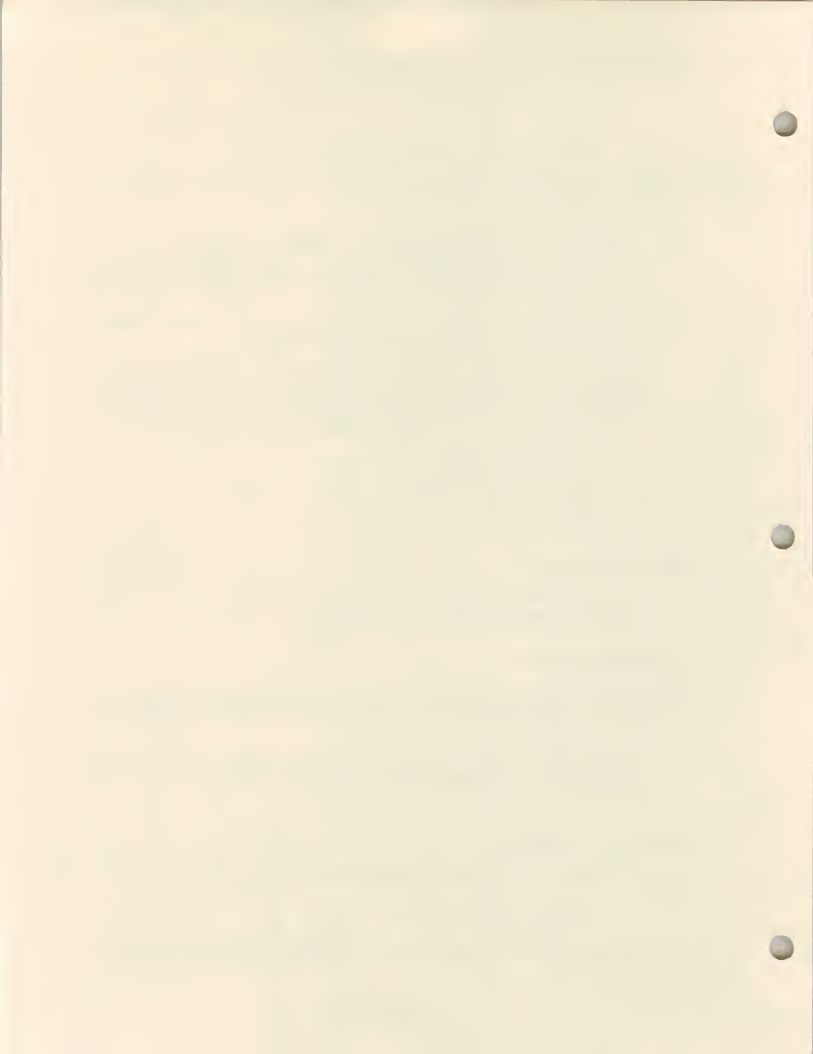
- Rand's FY 1980 revenues were derived primarily from the manufacturing, insurance, federal government and travel industries.

GEOGRAPHIC MARKETS

- Approximately 76% of Rand's FY 1980 revenues were derived from U.S. locations. The remaining 24% were from clients in Australia, Canada, Europe, Israel and the Far East.
- Operational offices are located in San Francisco and Palo Alto (CA), with sales offices in Westport (CT), Washington (DC), Chicago (IL), Clinton (NJ) and Dallas (TX).

COMPUTER HARDWARE

- Rand maintains the following equipment at the San Francisco data center:
 - One IBM 370/158-AP, MVS.
 - One IBM 370/158, MVS.
- A Honeywell Level 62-4 minicomputer is used by Rand Travel Services in Palo Alto.



COMPANY HIGHLIGHT

RAPIDATA, INC.
20 New Dutch Lane
Fairfield, NJ 07006
(201) 227-0035

Robert J. O'Brien, President
Public Corporation, OTC
Total Employees: 375
Total Company Revenues
Fiscal Year End
12/31/79: \$20,428,969

THE COMPANY

- Established in 1967, Rapidata, Inc. now provides interactive processing and professional services to more than 6,000 customers, primarily in the banking, utility, industrial and government sectors.
- Fiscal year 1979 revenues were \$20.4 million, representing a 7% growth over 1978 revenues of \$19.1 million. Income before taxes and earnings per share decreased 32% and 25% respectively. Net income declined 29% to \$900,392 in 1979, as compared to the 1978 figure of \$1,273,071. A five-year financial summary follows:

RAPIDATA, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ Thousands, Except Per Share Data)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
Revenues	\$20,429	\$19,105	\$17,913	\$15,624	\$14,772
. Percent increase from previous year	7%	7%	15%	6%	28%
Income before taxes and extraordinary item	\$ 1,717	\$ 2,517	\$1,836	\$ 802	\$ 2,427
. Percent increase (decrease) from previous year	(32%)	37%	129%	(67%)	163%
Net income	\$ 900	\$ 1,273	\$ 899	\$ 511	\$ 1,278
. Percent increase (decrease) from previous year	(29%)	42%	76%	(60%)	149%
Earnings per share	\$ 0.54	\$ 0.72	\$0.50	\$ 0.28	\$ 0.70
. Percent increase (decrease) from previous year	(25%)	44%	79%	(60%)	150%

COMPANY HIGHLIGHT/RAPIDATA, INC.

- In 1979, decreases in earnings were attributed to:
 - An 11% increase in salary expenses.
 - A 23% increase in equipment expenses due to the cost of REPLICA minicomputer products sales, increased depreciation charges and contract maintenance reflecting the addition of \$1,509,000 in computing equipment, and improvement costs for the data communications network.
 - A 41% percent rise in interest expenses on equipment loans and leases.
- Net income for the six months ending June 30, 1980, rose 50% to \$710,621 on a 7% increase in revenue over the comparable period in 1979, causing management to predict improved results for 1980.
- In October 1979, Rapidata contracted with New York Telephone to provide dedicated computer services on DEC computer systems for a 45-month period. The new contract replaces two previous contracts held by Rapidata. Vital to Rapidata's financial stability, the services provided to New York Telephone accounted for approximately 25% and 22% of Rapidata's revenues in 1979 and 1978, respectively.
- Rapidata concluded a five-year facility management contract with The Chase Manhattan Bank for a REPLICA-10 Minicomputer System in November 1979. Although expected to produce over \$1 million in revenues during the length of the contract, contribution to 1979 revenues was minimal (less than 1% of total revenues).
- Rapidata's 375 employees are segmented as follows:

- Marketing	200
- Operations and development	125
- Administrative	35
- Foreign operations	<u>15</u>
	375
- Major competitors of the company include Automatic Data Processing Inc.; Comuserve Inc.; Comshare, Inc.; General Electric Information Services Company; National CSS, Inc.; On-Line Systems, Inc.; and Tymshare, Inc.

KEY PRODUCTS AND SERVICES

- Approximately 85% of Rapidata's revenues are generated by interactive remote computing services for both dedicated and shared applications. Programming services account for the remaining 15% of business.
- Customer usage of proprietary software represented approximately 75% of total 1979 revenues, a result of Rapidata's continued concentration on

specialized applications. Five years ago use of proprietary software was less than 35% of total revenues.

- Among the company's most successful proprietary software products are PROBE, FISCAL, X2C, RAPIDLINK and RAPIDVOICE (all servicemarks of Rapidata). A brief description of these products follows:
 - PROBE: a generalized data management and analysis system used for forecasting, reporting and plotting. Applications include econometric and financial analysis and market research. As Rapidata's most successful product, PROBE has over 700 users and has received ICP's \$10 million award.
 - FISCAL: an integrated system for financial analysis applications such as capital investment, cash management and forecasting, and budget and performance reporting. FISCAL has received ICP's \$5 million award.
 - X2C: a user-oriented data management service that uses sequential, hierarchical or network data structuring. X2C provides nonprocedural report writing and data base maintenance capabilities in a high-level programming language. X2C has received ICP's \$1 million award.
 - RAPIDVOICE: a service that provides capabilities for touch-tone telephone input and voice response. RAPIDVOICE is used for such cross-industry applications as order entry, inventory query and cash management. Users currently number over 75.
 - RAPIDLINK: a system that allows users to access computational capabilities of all types of Rapidata computers. RAPIDLINK allows IBM 360/370 users to communicate directly with any part of the Rapidata system.
- Exhibit A provides a breakdown of the key products available on Rapidata's network.
- In December 1979, Rapidata introduced REPLICA-10, a distributed data processing system. Designed for the DEC 2020, its capabilities included options to operate as a standalone system or in conjunction with Rapidata's network. The initial price was about \$300,000 including operating software, CPU, peripherals and training.
 - In mid-1980, the marketing of REPLICA-10 was discontinued due to low marketability.
- In June and July of 1980, Rapidata added several new products to its network:
 - BONDS: a data base of information on the over-the-counter bond market, including weekly bid, offer and closing price information on over 6,000 bonds.

EXHIBIT A

APPLICATIONS AVAILABLE ON RAPIDATA'S NETWORK SERVICE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
• OPERATING ENVIRONMENT – DEC 10/70s, 10/80, 2020, TOPS 10 OS – HONEYWELL 437s, CUSTOM OS • PROGRAMMING LANGUAGES SUPPORTED – ASSEMBLER – BASIC – COBOL – FORTRAN – PL/I • DATA MANAGEMENT SOFTWARE – DBMS-10 – PROBE – X2C • DATA MANAGEMENT AND REPORTING SYSTEMS – RAPIDTAB – RIPS • DATA BASES AVAILABLE – BAMACS (BANK OF AMERICA MONEY AND CREDIT STATISTICS) – BONDS (OTC BOND MARKET) – CITIBASE (CITIBANK ECONOMIC DATA BASE) – FEDERAL RESERVE BANK OF SAN FRANCISCO (FLOW OF FUNDS) – IFS (INTERNATIONAL FINANCIAL STATISTICS) – MARKET STATISTICS - DEMOGRAPHIC DATA BASE – NBER (NATIONAL BUREAU OF ECONOMIC RESEARCH FINANCIAL DATA BASE) – RAPIDQUOTE (SECURITIES DATA BASE) – TELERATE (HISTORICAL DATA BASE) – VALUELINE – ZIP CODE DEMOGRAPHIC DATA BASE	• FINANCIAL APPLICATIONS/TOOLS – CAPBUD (CAPITAL BUDGETING) – CPFA (CAPITAL PROJECT FINANCING ANALYSIS) – CPTRAC (CAPITAL TRACKING) – CASH FLOW ANALYSIS – CASH MANAGEMENT SYSTEM – CLIENT GENERAL LEDGER – FISCAL – MONITAUR: PORTFOLIO MANAGEMENT SYSTEM – TITAN – ZBB (ZERO-BASED BUDGETING) • GRAPHICS – GRAPHICS – GRAPHS – PROBE GRAPHICS • TELEPHONE COMPANY APPLICATIONS – ANALIT (ANALYSIS OF LINE INSULATION TESTS) – ESS CUTOVER (CENTRAL OFFICE CUTOVER ANALYSIS) – FADS (FORCE ADMINISTRATION SYSTEM) – TOUR (TOUR SCHEDULING) • OTHER KEY PRODUCTS – BACKGROUND-10 – RAPIDVOICE – RAPIDLINK – SPSS-10 – SXU, DXU

COMPANY HIGHLIGHT/RAPIDATA, INC.

- GRAPHICS: an interactive, keyword-driven language for the preparation of production-quality plots, charts and graphs. GRAPHICS offers efficient, easy-to-learn commands that result in less development time for the user.
- ZIP CODE DEMOGRAPHIC DATA BASE: contains population, income, housing and education information for over 35,000 U.S. Postal Zip Codes. Fifty-six key fields of information are covered, including: total population, median family income, median years of school completed, male/female population by age, median value of owner-occupied homes, as well as other detailed information on occupation, ethnic background and neighborhood classification.
- In July 1980, Rapidata announced enhancements to its Telerate Historical Data Base, which has been offered since 1978. In addition to historical information on the domestic money and credit markets, the Data Base will be expanded to include key economic indicators, metal and soft commodity futures data, and an expanded international section.
- Also in July 1980, Rapidata entered into an agreement with Pacific Bancorporation for joint development and marketing of FUTURECASH, a computerized financial management timeshare system for banks. FUTURECASH is designed to handle all financial recordkeeping, reporting and analysis for small- and medium-sized banks.
- Rapidata's consulting services include systems definition, computer design with complete implementation and documentation, and the design of financial applications that include the use of minicomputers.
- Rapidata has developed two methodologies for marketing consulting and network services to planning and marketing departments. Descriptions of these services follow.
 - Corporate Planning and Control Service is a custom-designed approach that assists management in identifying, organizing, accessing and analyzing critical financial information. Areas covered include:
 - Financial consolidation.
 - Financial budgeting.
 - Capital investment analysis.
 - Merger and acquisition analysis.
 - Performance control.
 - Market Planning and Control Services, introduced in May 1979, is a consultative approach for businesses to develop solutions to marketing problems in a broad range of decision areas. These include:

COMPANY HIGHLIGHT/RAPIDATA, INC.

- Sales forecasting and analysis.
 - Pricing.
 - Product line planning.
 - Test market selection.
 - Media allocation.
 - Market share analysis.
 - Demographic market analysis.
 - Interactive graphics.
- New service offerings now in the planning stage include:
 - FUNDOR: A prepackaged integration of PROBE and FISCAL for use in financial planning and consolidation. FUNDOR is structured around the basic income statement, cash and funds flow, balance sheet and ratio analysis formats. The new product will be particularly useful for operating plans, working capital plans, capital plans and corporate development.
 - XPLOR: Rapidata's new data management system, will be designed to retrieve, report and modify the contents of a user-created XPLOR data base, and will also accommodate other structured data bases. It is an integrated system composed of simple, precise, English keyword commands performed interactively.

INDUSTRY MARKETS

- The banking and utility industries each account for approximately 25% of Rapidata's revenues. Both distribution and transportation industries provide 5% of the company's revenues, with the remaining 40% spread across industry sectors.

GEOGRAPHIC MARKETS

- Approximately 97% of Rapidata's 1979 revenues were domestic, and 3% were derived from European operations.
- Domestic customers and sales offices are distributed throughout the U.S., including the following cities: Atlanta, Boston, Chicago, Dallas, Detroit, Fairfield (NJ), Hartford, Los Angeles, Melville (NY), Ft. Lauderdale, New York, Philadelphia, San Francisco, Stamford (CT), Pittsburgh, and Silver Spring (MD).

COMPANY HIGHLIGHT/RAPIDATA, INC.

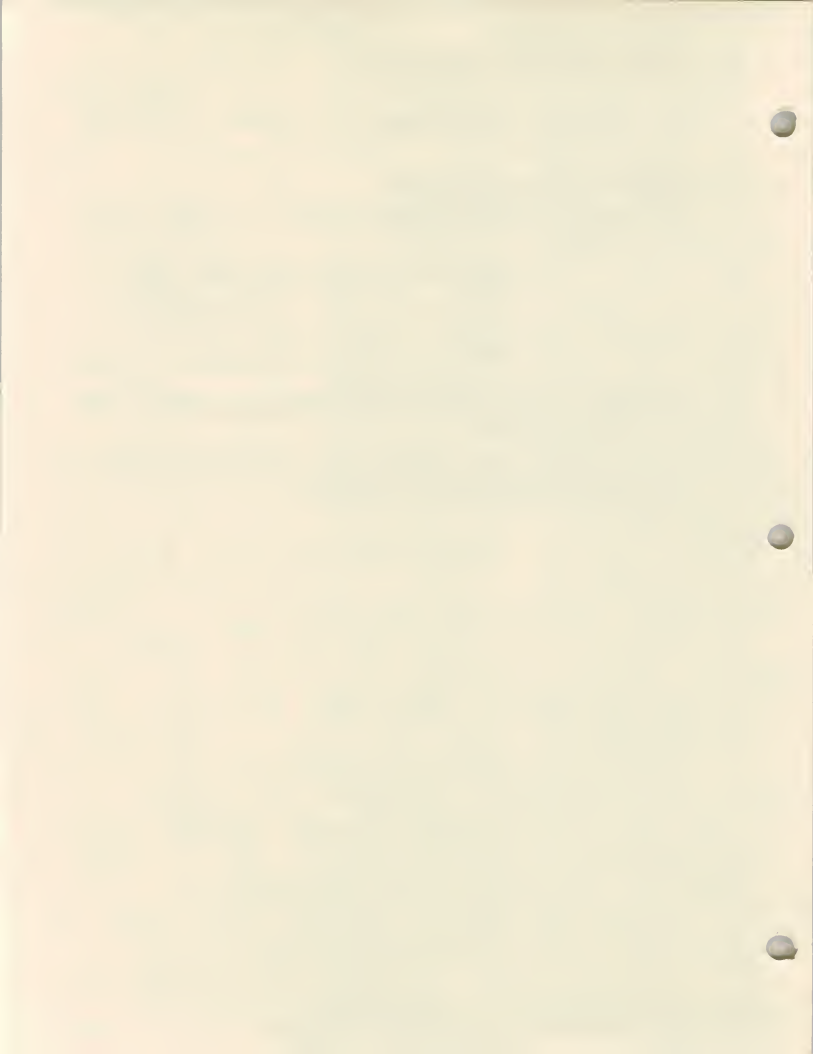
- The company's international headquarters are at Rapidata International Ltd., London, UK.

COMPUTER HARDWARE AND SOFTWARE

- Computer hardware includes DEC and Honeywell equipment, and customized operating systems:

13	Honeywell	437	Custom operating system
4	DEC	10/70	Rapidata's TOPS 10, Custom operating system
1	DEC	10/80	Rapidata's TOPS 10, Custom operating system
1	DEC	2020	
14	DEC	PDP /11	(Used as front-end processors)

- Rapidata has its own network, RAPIDNET, which is used in conjunction with TYMNET to service almost any city in the United States. WATS lines and FX lines are also installed.
- In January 1979, Rapidata extended its domestic TELEX capability worldwide. Access to Rapidata's services are now available through more than 250,000 TELEX terminals located in over 200 countries.



COMPANY HIGHLIGHT

RAPIDATA, INC.
20 New Dutch Lane
Fairfield, NJ 07006
(201) 227-0035

Robert J. O'Brien, President
Public Corporation, OTC
Total Employees: 362
Total Company Sales, Fiscal Year
End 12/31/78: \$19,105,472

THE COMPANY

- Rapidata, Inc. provides interactive processing services to its more than 6000 clients in the utility, industry, and government sectors.
- In 1978, revenues reached \$19.1 million, 7% above 1977 revenues of \$17.9 million, reflecting a modest growth rate in total revenues. Net income, however, rose 42% to \$1,273,071, compared to \$899,441 reported in 1977. A five year financial summary follows:

FIVE YEAR FINANCIAL SUMMARY, RAPIDATA

FISCAL YEAR ITEM	1978	1977	1976	1975	1974
Revenues	19,105,472	\$17,912,681	\$15,623,939	\$14,772,314	\$11,511,632
Income before taxes & extraordinary credit	2,517,071	1,835,593	802,456	2,426,585	924,228
Net Income	1,273,071	899,441	510,977	1,278,325	514,237

- The decline in earnings in 1976 was a result of two factors: increased expenses and equipment costs, and increased competitive pressure in Rapidata's specialized market of providing interactive processing for large corporations in the Northeast.
- The New York Telephone Company accounted for approximately 22% of revenues in 1978, largely associated with two long-term contracts for dedicated computer services. One of these has already expired, the other is due to terminate in late 1979. Rapidata is in the process of contract renewal negotiations with New York Telephone Company. If either contract is not renewed, Rapidata's business would be adversely affected.
- In 1978 Rapidata established a minicomputer services division. An announcement concerning the product offering from this division will be issued in 1979. INPUT believes the product to be offered will be user on-site hardware services, similar to those presently available from NCSS and Automatic Data Processing.

COMPANY HIGHLIGHT/RAPIDATA, INC.

- In June 1976, Rapidata and ACTS Computing Division of Lear Siegler, Inc. signed a two-year contract whereby ACTS' users would be serviced through Rapidata computers. In mid-1977, Rapidata acquired ACTS' 200 interactive services clients.

KEY PRODUCTS AND SERVICES

- Eighty-five percent of Rapidata's revenues is generated by interactive remote computing services for both dedicated and shared applications. The remaining 15% of business is the result of programming services.
- Among the company's most successful proprietary software products are PROBE, FISCAL, X2C, RAPIDLINK AND RAPIDVOICE (all servicemarks of Rapidata). These and other products provide the following services:
 - PROBE: a generalized data management and analysis system designed primarily for forecasting, reporting and plotting. Applications include econometric and financial analysis and market research. It has over 700 installations and has received ICP's \$10 million award.
 - PROBE GRAPHICS: for preparing time-graphs and cross-section diagrams including line graphs, bar graphs, and histograms.
 - FISCAL: an integrated system for financial analysis applications such as capital investment analysis, cash management and forecasting, budget, and performance reporting. FISCAL has received the ICP \$5 million award.
 - CASH MANAGEMENT SYSTEM: for collecting, analyzing, and reporting data related to management and control of cash. The system uses the RAPIDVOICE system.
 - X2C: a user-oriented data management service that uses sequential, hierarchical, or network data structuring. X2C provides non-procedural report writing and database maintenance capabilities in a high-level programming language. X2C has received ICP's \$1 million award.
 - RAPIDVOICE: provides capability for touch-tone telephone input and voice response. The service is used for such cross-industry applications as order entry, inventory query, and cash management. Users currently number over 50.
 - RAPIDLINK: allows users to access computational capabilities of all types of Rapidata computers. The system allows any member of user CPUs to access Rapidata facilities and transfer files. Rapidata facilities can be used as a means of moving data between computers at different user locations.
 - Background-10: a system for production of data processing applications that do not require immediate turnaround. Using this service, jobs which run overnight receive 30% reduction from normal time sharing prices.

COMPANY HIGHLIGHT/RAPIDATA, INC.

- DBMS-10: a generalized data base management system for sequential, tree-structured hierarchical and network structured data bases. It can be accessed through COBOL and FORTRAN as well as X2C and packaged utilities. DBMS-10 was developed by Digital Equipment Corporation.
- Additional data bases available include:
 - CITIBANK ECONOMIC DATABASE: over 3,000 National Economic Data Series, updated daily.
 - FEDERAL RESERVE BANK OF SAN FRANCISCO: over 13,000 series on economic activity of financial institutions, employment, and industry sectors, updated daily.
 - INTERNATIONAL FINANCIAL STATISTICS: national economic and foreign trade data on over 150 countries and regions, updated monthly by the International Monetary Fund.
 - MARKET STATISTICS: features data published annually in Sales Management Magazine's Survey of buying power. Data includes 108 types of demographic and economic data for each U.S. county.
 - TELERATE HISTORICAL DATABASE: over 8,000 financial interest rate, foreign exchange, and banking series, updated daily.
- Rapidata offers the following additional products:
 - SXU, DXU: System and data exchange units for on line access and data transfers between all systems in the network.
 - Financial service software:
 - Capital Asset Management, a series of four computer systems: Capital Budgeting (CAPBUD), Capital Tracking (CPTRAC), Capital Project Financing Analysis (CPFA), and Cash Flow Analysis.
 - Client General Ledger.
 - Zero-Base Budgeting.
 - Monitaur: Portfolio Management System.
 - Data Management and Reporting Services:
 - Rapidtab: Generalized system for the preparation of tabular reports.
 - RIPS: High level language for the maintenance and reporting of sequential files.
 - SPSS-10: Rapidata recently added the DEC version of the Statistical Package for the Social Sciences to its network. This system compliments the PROBE product line.

COMPANY HIGHLIGHT/RAPIDATA, INC.

- Telephone Company Applications: Analysis of line insulation tests (ANALIT), Central Office Cutover Analysis (ESS CUTOVER), Force Administration System (FADS), Tour Scheduling (TOUR), and a system for preparing PERT/CRITICAL PATH reports and GANTT Charts.
- Rapidata also provides a full range of consulting services including systems definition, computer design with complete implementation and documentation, and the design of financial applications which include the use of minicomputers.
- Market Planning and Control Services, introduced in May 1979, is a consultative approach for businesses to develop solutions to marketing problems in a broad range of decision areas. These areas include:
 - Sales forecasting and analysis.
 - Pricing.
 - Product line planning.
 - Test market selection.
 - Media allocation.
 - Market share analysis.
 - Demographic market analysis.

INDUSTRY MARKETS Twenty-eight percent of Rapidata's revenues stems from the utilities industry and 18% from the banking industry. The remainder of business is spread across industry sectors.

GEOGRAPHIC MARKETS Customers and sales offices are distributed throughout the U.S. including the following cities: Atlanta, Boston, Chicago, Detroit, Fairfield (NJ), Hartford, Los Angeles, Melville (NY), Ft. Lauderdale, New York, Philadelphia, San Francisco, Stamford (CT), Pittsburgh, and Silver Spring (MD). The company's international headquarters are at Rapidata International Ltd., London, UK.

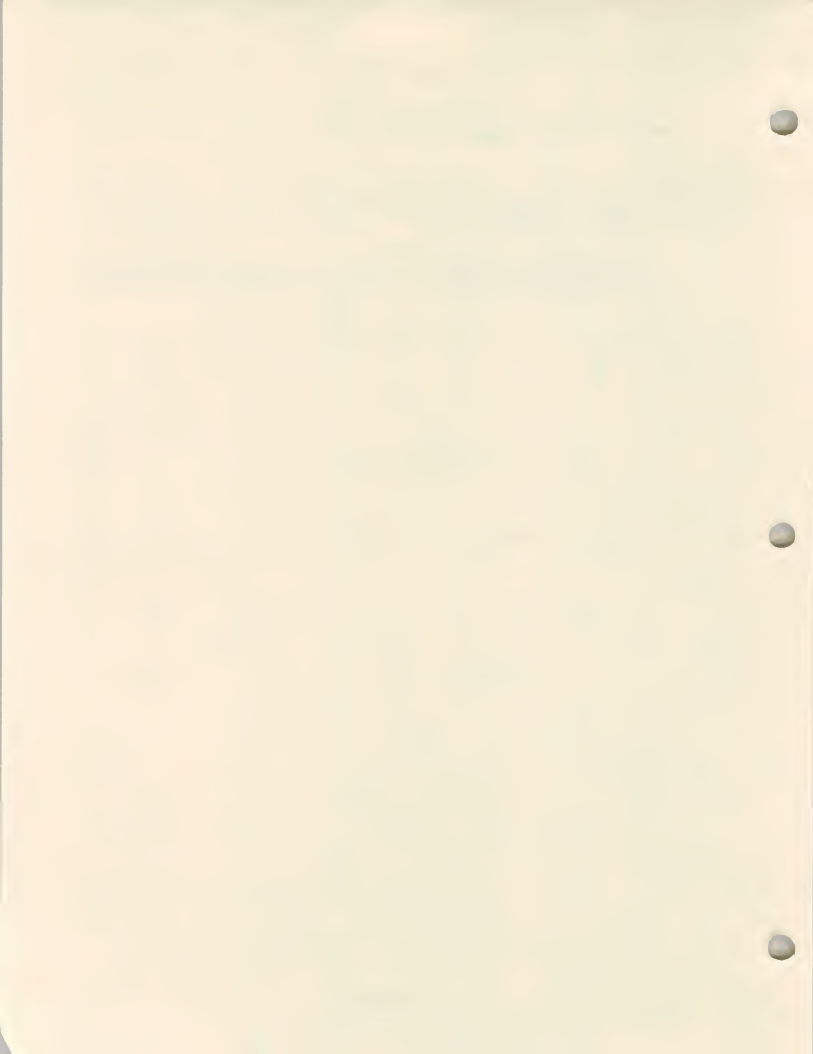
COMPUTER HARDWARE AND SOFTWARE

- Computer hardware includes DEC and Honeywell equipment, and customized operating systems:

13	Honeywell	437	Custom operating system
3	DEC	10/70	Custom operating system (Rapidata's TOPS10)
1	DEC	10/80	Custom operating system (Rapidata's TOPS10)
1	DEC	2020	
1	DEC	PDP/11	
1	Prime		

COMPANY HIGHLIGHT/RAPIDATA, INC.

- Rapidata has its own network, RAPIDNET, which is used in conjunction with TYMNET to service almost any city in the United States. WATS lines and FX lines are also installed.
- In January 1979, Rapidata extended its domestic TELEX capability worldwide. Access to Rapidata's products and services are now available through the more than 250,000 TELEX terminals located in over 200 countries.



COMPANY HIGHLIGHT

RAPIDATA, INC.
20 New Dutch Lane
Fairfield, NJ 07006
(201) 227-0035

Robert J. O'Brien, President
Public Corporation, OTC
Total employees: 340
Total company sales, fiscal
year end 12/31/76: \$15,623,939

THE COMPANY

- Rapidata, Inc. provides interactive processing services to its more than 6000 clients in the utility, industry, and government sectors.
- In 1976, revenues reached \$15.6 million, 6% above 1975 revenues of \$14.8 million, continuing a pattern of steady revenue growth as shown in the chart below:

Rapidata Historical Revenues and Profits

	Revenues	Net Income	Income as % of Revenues
1970	4,375,510	\$ (144,542)	(3.3)%
1971	5,401,463	567,644	10.5
1972	7,684,214	1,086,253	14.1
1973	9,535,161	741,234	7.5
1974	11,511,632	541,237	4.5
1975	14,772,315	1,278,325	8.7
1976	15,623,939	\$ 510,977	3.3%

- During the same period, however, net income declined 150% from \$1.3 million to \$510,977 and net earnings per share of common stock declined from \$.70 to \$.28 with 1.8 million shares outstanding. Even with this decline, earnings were 11% of revenues in 1976 and the company had no senior debt.
- The decline in earnings was basically a result of two factors: increased expenses and equipment costs without comparably increased revenues and increased competitive pressure in Rapidata's specialized market: interactive processing for large corporations in the Northeast. Income was positively affected by a decrease in the effective tax rate from 41% in 1975 to 36% in 1976.
- Since early 1976, Rapidata has been working to expand both its applications and geographic markets. First quarter 1977 revenues, at \$4.415 million, were up 15% over the \$3.844 million in 1976 although net income declined 66% for the same period from \$277,849 (\$.15 per share) to \$167,199 (\$.09 per share). This income decline resulted from a lower than expected investment tax credit for 1977.

COMPANY HIGHLIGHT/RAPIDATA, INC.

- The New York Telephone Company accounted for approximately 30% of revenues in 1976, largely associated with long term contracts expiring in 1978 and 1979.
- In June 1976, Rapidata and ACTS Computing Company signed a two year contract whereby ACTS's users would be serviced through Rapidata computers. In mid 1977, Rapidata acquired ACTS's 200 interactive services clients. *(6-77% of total Rapidata bus.)*
- In late 1976 Rapidata qualified as a Teleprocessing Services Procurement Program (TSP) vendor to the Federal Government. This should aid the company in expanding its Federal revenues. The company has also expanded its financial market customer base through agreements with Bank of America, State Street Bank and Trust Company (Boston), and Pittsburgh National Bank.

KEY PRODUCTS AND SERVICES

- Rapidata offers interactive remote computing services for both dedicated and shared applications. In 1976, approximately 19% of the company's revenues were generated by the sale of dedicated services.
- The company's most successful products are PROBE, FISCAL, X2C, RAPIDLINK, and RAPIDVOICE (all servicemarks of Rapidata). These and other products provide the following services:
 - PROBE: a generalized data management and analysis system designed primarily for forecasting, reporting and plotting. Applications include econometric and financial analysis and market research. It has over 650 installations and has received ICP's \$5 million award.
 - PROBE GRAPHICS: for preparing time-graphs and cross-section diagrams including line graphs, bar graphs, and histograms.
 - FISCAL: an integrated system for financial analysis applications such as capital investment analysis, cash management and forecasting, budget, and performance reporting. ICP \$2 M award.
 - CASH MANAGEMENT SYSTEM: for collecting, analyzing, and reporting data related to management and control of cash. The system uses RAPIDVOICE system.
 - X2C: a user oriented data management service that utilizes sequential, hierarchical, or network data structuring. X2C provides non-procedural report writing and database maintenance capabilities in a high level programming language.
 - RAPIDVOICE: provides capability for touch-tone telephone input and voice response. The service is used for such cross industry applications as order entry, inventory query, and cash management. Users currently number over 50.

COMPANY HIGHLIGHT/RAPIDATA, INC.

- RAPIDLINK: allows users to access computational capabilities of all types of Rapidata computers. The system allows any member of user CPUs to access Rapidata facilities and transfer files. Rapidata facilities can be used as a means of moving data between computers at different user locations.
 - Background-10: a system for production of data processing applications that do not require immediate turnaround. Using this service, jobs run overnight receive 30% reduction from normal time sharing prices.
 - DBMS-10: a generalized data base management system for sequential, tree-structured hierarchical and network structured data bases. It is an extension to COBOL and FORTRAN. DEC also provides DBMS-10 as unbundled software for DEC system 10 installations.
- Additional data bases available include:
- NATIONAL BUREAU OF ECONOMIC RESEARCH: over 2,500 National Economic Data Series; updated daily.
 - FEDERAL RESERVE BANK OF SAN FRANCISCO: over 13,000 series on economic activity of financial institutions, employment, and industry sectors; updated daily.
 - INTERNATIONAL FINANCIAL STATISTICS: national economic and foreign trade data on over 150 countries and regions; updated monthly by the International Monetary Fund.
 - MARKET STATISTICS: features data published annually in Sales Management Magazine's Survey of buying power. Data include 108 types of demographic and economic data for each U.S. county.
 - BAMACS: Bank of America Money And Credit Statistics: consists of current and historical financial statistics. BAMACS is designed to aid corporate treasurers, portfolio managers, and financial analysts in tracking interest rates, and identifying investment and borrowing opportunities. Specific data bases provided include interest rates, financial operating statistics and Federal Reserve flow of funds accounts. Rapidata has an exclusive license to offer this service of the Bank Investment Securities Division of the Bank of America.
 - Programming Services: provides a full range of consulting services including systems definition, computer design with complete implementation and documentation, and concentration on financial applications utilizing latest tools, including mini-systems, as solutions to problems of customers.

APPLICATIONS: Primary revenues are derived from specialty financial applications. Utility and general business applications are also offered.

COMPANY HIGHLIGHT/RAPIDATA, INC.

INDUSTRY MARKETS: Rapidata serves several industries, with some concentration in telephone utilities. Banking, finance, industry, and government markets are also targeted.

GEOGRAPHIC MARKETS: Customers and sales offices are distributed throughout the U.S., including the following cities: Atlanta, Boston, Chicago, Fairfield (NJ), Los Angeles, Melville (NY), Miami, Newport Beach, New York, Palo Alto, Philadelphia, San Francisco, Stamford (CT), and Silver Spring (MD). The company's international headquarters are at Rapidata International Ltd., London, UK.

COMPUTER HARDWARE AND SOFTWARE:

- Computer hardware includes DEC and Honeywell equipment, and customized software:

13	Honeywell	437	custom software
2	DEC	10/70	custom software (Rapidata's TOPS10)
1	DEC	10/80	custom software (Rapidata's TOPS10)
- Early in 1977 Rapidata sold its IBM operations on a favorable basis.

COMPANY HIGHLIGHT

RAPIDATA, INC.
20 New Dutch Lane
Fairfield, NJ 07006
(201) 227-0035

Robert J. O'Brien, President
Public Corporation

Total Company and Computer Services Sales
as of FY ending 12/75: \$14,772,314

12/76: \$15m (Library via Colleen)

NUMBER OF EMPLOYEES engaged in computer services: 287

KEY PRODUCTS/SERVICES: Rapidata markets entirely remote computing services. Products include RAPIDLINK and RAPIDVOICE which are service marks of Rapidata.

- **RAPIDLINK:** allows users to access computational capabilities of all types of Rapidata computers. The system allows any member of user CPUs to access Rapidata facilities and transfer files. Rapidata facilities can be used as a means of shifting data between computers at different user locations. This could bring the firm very close to being a specialized common carrier and possibly subject to FCC regulations.
- **RAPIDVOICE:** provides capability for touch-tone telephone input and voice response. The service is used for such manufacturing industry applications as order entry and inventory query.
- **Background-10:** a system for production of data processing applications that do not require immediate turnaround. Using this service jobs run overnight receive 30% reduction from normal time sharing prices.
- **Crosstabs:** a remote version of a statistical retrieval reporting system. It was developed by Cambridge Computer Associates and was purchased outright by Rapidata.
- **PROBE:** a generalized data management and analysis system designed primarily for forecasting, reporting, and plotting. Applications it is used for include econometric analysis, financial analysis and market research.
- **PROBE GRAPHICS:** for preparing time-graphs and cross-section diagrams, including line graphs, bar graphs and histograms.

June/1976

H-37.1

INPUT

COMPANY HIGHLIGHT/RAPIDATA, INC.

- CASH MANAGEMENT SYSTEM: for collecting, analyzing and reporting data related to management and control of cash. The system uses Rapidvoice system.
- Fiscal: a report generator system for financial applications, such as capital investment, cash management and forecasting, budget and performance reporting.
- MUFU, Insurance Policy Preparation Packages.

Additional data bases available include:

- VALUE LINE
- NATIONAL BUREAU OF ECONOMIC RESEARCH
- FEDERAL RESERVE BANK OF SAN FRANCISCO
- INTERNATIONAL FINANCIAL STATISTICS
- MARKET STATISTICS: features data published annually in Sales Management Magazine's Survey of buying power. Data include 108 types of demographic and economic data for each U.S. county.
- THE LONG ISLAND DATA BANK: a data bank and forecasting system which provides economic and financial data on Long Island (Statistical Metropolitan Area). The data base is maintained by Economic Projects of Long Island, Inc., and used mostly by researchers and planners in government, business and academics.
- DBMS-10: a generalized data base management system for sequential, tree-structured hierachial and network structured data bases. It is an extension to COBOL and FORTRAN. DEC also provides DBMS-10 as unbundled software for DEC system 10 installations.
- BAMACS; Bank of America Money and Credit Statistics: consists of current and historical financial statistics. BAMACS is designed to aid corporate treasurers, portfolio managers and financial analysts in tracking interest rates, and identifying investment and borrowing opportunities. Specific data bases provided include interest rates, financial operating statistics and Federal Reserve flow of fund accounts. Rapidata has an exclusive license to offer this service of the Bank Investment Securities Division of the Bank of America.

June/1976

COMPANY HIGHLIGHT/RAPIDATA, INC.

- Programming services; provide software services mostly in conjunction with jobs run on the Rapidata network.

APPLICATIONS: Applications are mostly general business and data base management. Telephone industry applications include:

ANALIT; Analysis of Line Insulation Tests
ESS CUTOVER; Central Office Cutover Analysis
FADS, Force Administration System
TOUR, Tour Scheduling

INDUSTRY MARKETS: Rapidata serves several industries, with some concentration in telephone utilities.

GEOGRAPHIC MARKETS: Customers and sales offices are distributed throughout the U.S., including the following cities:

Atlanta, GA	Miami, FL
Boston, MA	New York, NY
Chicago, IL	Philadelphia, PA
Fairfield, NJ	San Francisco, CA
Los Angeles, CA	Washington, DC
Melville, NY	

COMPUTER HARDWARE AND SOFTWARE: Computer hardware includes DEC, IBM and Honeywell equipment, and customized software:

1	IBM	370/158	VM under OS, CMS and DOS
13	Honeywell	437	custom software
2	DEC	1070	custom software (Rapidata's TOPS10)
1	DEC	1080	custom software (Rapidata's TOPS10)

OVERALL ASSESSMENT AND TRENDS: Rapidata has demonstrated a steady growth trend, as shown in the table below:

Rapidata Historical Revenues and Profits

	Revenues	Net Income	Income as Percent of Revenues
1970	4,375,510	(144,542)	(3.3%)
1971	5,401,463	567,644	10.5%
1972	7,684,214	1,086,253	14.1%
1973	9,535,161	741,234	7.5%
1974	11,511,632	514,237	4.5%
1975	14,772,314	1,278,325	8.7%

COMPANY HIGHLIGHT/RAPIDATA, INC.

Founded in 1967 Rapidata's trend is likely to continue, under direction of the current management team:

A. S. Lane	Chairman
R. J. O'Brien	President
F. R. Nichols	Vice President of Finance
C. D. Karcher	Vice President of Marketing
M. D. Newman	Secretary
F. R. Nichols	Treasurer

Like Tymshare, Rapidata must take a cautious approach to marketing message switching as part of its RAPIDLINK service.

June/1976

COMPANY

RAPIDATA

FY

12/31

FISCAL YEAR	ANNUAL REVENUE (\$millions)	ANNUAL GROWTH RATE (%)	COMMENTS
1971	<u>5</u>	<u>60</u>	
1972	<u>8</u>	<u>25</u>	
1973	<u>10</u>	<u>20</u>	
1974	<u>12</u>	<u>25</u>	
1975	<u>15</u>	<u>7</u>	
1976	<u>16</u>	<u>13</u>	
1977	<u>18</u>		
		25 %	Previous years Average
1978	20	11 %	1977-1978
		15 %	Max Rate Projected
			Min Rate Projected
1979	Max Revenue <u>\$23 M</u>	Min Revenue _____	Avg. Revenue _____
1980	<u>26</u>	_____	_____
1981	<u>30</u>	_____	_____
1982	<u>35</u>	_____	_____
1983	<u>40</u>	_____	_____



COMPANY	TOTAL REVENUES - FISCAL YEAR END				ACQUISITION INFORMATION			
	1978	1977	1976	1975	ACQUIRED Company	Place	Date	Rev.
1. NCSS 2/28	48.89	41.70	35.60	32.61	Zytron (argument) TBS Cpt/Ctrs. RTW Computer Network		5/78 1974	±18m (2/78)
2. DRC 6/30 Cptr Soc	185.56 89.61	148.01	135.34	135.34 74.87	Consoer. Townsend & Assoc Realty Graphic Data Dissemination Sys American Data Sys	LA Long Beach CA	6/76 12/76 ? 3/77 1978	cons. eng. 25m mult. listing pub auto text & graphics ngt cons.
2. Pop data 12/31	3/31-4.80	17.91	15.62	14.77	ACTS Div MacGregor		mid 77	t/s



Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

August 1996

Raptor Systems, Inc.

Chairman & CEO: Robert A. Steinkrauss
President & COO: Shaun McConnon
69 Hickory Drive
Waltham, MA 02154
Phone: (617) 487-7700
Fax: (617) 487-6755
Internet: <http://www.raptor.com>



Status:	Public
Employees:	80+ (7/96)
Revenue, FYE 12/31/95:	\$3,902,000
Revenue, 6 mos. ending 6/31/96:	\$4,975,000

Key Points

- Raptor Systems, Inc. is a provider of integrated security and security management software and services.
- In July 1996, Raptor formally launched its European operations, and in June received National Computer Security Association (NCSA) certification for its Eagle firewall.
- In May 1996, Raptor announced the promotion of Robert A. Steinkrauss to Chairman of the Board and Chief Executive Officer and of Shaun McConnon to the positions of President and Chief Operating Officer.
- In April 1996, the company unveiled EagleNetwatch, the first 3-D visual security monitor.
- In January 1996, Raptor released Eagle NT, the industry's first enterprise network security firewall for Windows NT.

Company Description

Founded in 1992, Raptor Systems develops, markets, licenses, and supports a family of integrated network security software products that provide security for organizational networks.

The company's application-level Eagle firewall and EagleConnect virtual private network technology provide the basis of network security solutions that enable organizations to protect their networks from unauthorized access by internal and external users and to secure organizational communications over the Internet and internal networks.

In February 1996, Raptor Systems completed an initial public offering of three million shares, which generated \$41.2 million for the company.

Organization and Structure

Raptor Systems' key executives are listed below:

Raptor Systems, Inc. Key Executives

Name	Title
Robert A. Steinkrauss	Chairman & CEO
Shaun McConnon	President & COO
Alan Kirby	SVP Engineering and CTO
Lance Urbas	VP Technical Services
Jimmy W. Charlton	VP North American Sales
Michael L. Grandinetti	VP Marketing
Robert F. Fincke	VP, Treasurer and Controller
John S. Ingalls	CFO and VP Finance
Jack Hembrough	VP Europe

Raptor is headquartered in Waltham (MA) and maintains direct domestic sales offices in Atlanta (GA), Boston (MA), Chicago (IL), Dallas (TX), Florida, Los Angeles (CA), New York (NY), San Francisco (CA), and Washington D.C.

International offices are in Amsterdam (the Netherlands), the U.K., and Tokyo.

Company Strategy

Raptor's objective is to provide the industry's most comprehensive family of integrated network security solutions.

The key elements of Raptor's strategy to achieve this objective are:

- Provide enterprise-wide security solutions
- Leverage and expand multiple distribution channels
- Penetrate and leverage accounts with modular product offerings
- Maintain and extend technological leadership
- Promote and support leading platforms and open standards

To achieve these objectives, Raptor has a targeted distribution model consisting of direct sales, strategic VARs, regional VARs, and international VARs that is designed to enable the company to penetrate the broad market of network users.

Additionally, in July 1996, Raptor unveiled its Secure Business Practices strategy to address customer requirements for protecting, enabling, and managing their network security systems.

- Protecting corporate information involves building a "zone of trust" that protects each vulnerability in the network.
- Enabling corporate security involves building a set of security solutions that enable corporations to develop and deploy enterprise security.
- Managing information security provides customers with a value-added suite of tools to control the breadth and depth of their security infrastructure, allowing them to assess, formulate, enforce, and manage their security.

Financials

Raptor Systems' revenue, which is comprised of sales of software licenses and maintenance revenues, was \$3.9 million in 1995, a significant increase over 1994 revenue of \$248,000.

- Revenue growth was attributed primarily to the company's investment in its distribution channels and increased sales of its Eagle and EagleLAN products.
- A three-year financial summary is shown below.

Raptor Systems, Inc. Three-Year Financial Summary (\$ Thousands, except per-share data)

Item	Fiscal Year		
	1995	1994	1993
Revenue	\$3,902	\$248	\$477
• Percent change from previous year	*	(83%)	N/A
Income (loss) before taxes	\$(2,762)	\$(1,961)	\$(213)
• Percent change from previous year	(41%)	(820%)	N/A
Net income (loss)	\$(2,686)	\$(1,963)	\$(216)
• Percent change from previous year	(37%)	(808%)	N/A
Earnings (loss) per share	\$(0.38)	\$(0.31)	\$(0.04)
• Percent change from previous year	(23%)	(675%)	N/A

* Percent change exceeds 1,000%.

Selling and marketing expenses increased 45%, from \$225,000 in 1994 to \$326,000 in 1995, primarily due to the opening of eight sales offices and the development of the company's VARs.

Research and development expenses were \$1.4 million in 1995, a 98% increase over

\$708,000 in 1994. Management attributes the increase to the addition of development personnel and contract developers.

Revenue Analysis by Product Line

During 1995, revenue derived from the Eagle firewall and EagleLAN products was approximately \$3.3 million (85% of revenue).

Interim Results

Revenue for the six months ending June 30, 1996 was \$4.6 million, a 318% increase over \$1.1 million for the first six months of 1995. Raptor management attributes revenue growth primarily to sales of its EagleNT product, which accounted for 54% of all product shipments for the quarter, and a 25% expansion of its reseller base.

Net income for the quarter ending June 30, 1996 was \$150,000 (\$0.01 per share), compared to a net loss of \$559,000 for the same period in 1995. Net losses for the first six months of 1996 were \$279,000 (\$0.03 per share), compared to losses of \$973,000 (\$0.14 per share) for the first six months of 1995.

Employees

As of December 31, 1995, Raptor Systems, Inc. had 58 employees, segmented as follows:

Marketing and sales.....	33
Customer support.....	4
Research and development	13
Administration and finance.....	8
	58

The company currently has more than 80 employees.

Key Products and Services

Raptor Systems feels that, in order for an organization to provide a "zone of trust" around its extended enterprise network, the organization must address security issues in what Raptor calls the *five domains of network security*. These are:

- The Internet
- LANs and intranets
- Mobile PC users
- Remote sites
- Enterprise security management

Raptor's software products provide enterprise-wide security for organizational networks, including networks that are connected to the Internet.

- The company's family of network security solutions can establish a "zone of trust" around an organization by protecting its networks from unauthorized access by internal and external users and by securing organizational communications over the Internet and internal networks.
- At the core of Raptor Systems' product family is the Eagle firewall, which protects an organization's internal network from unauthorized Internet access and can be integrated with other individual product modules that address the security needs of LAN workgroups, mobile users, and remote sites.

Raptor's software product lines are described below.

Eagle 4.0 and Eagle NT 3.05 are application-level firewalls that protect an internal network from external intrusion and serve as the foundation for the rest of the Raptor product line

- Secure communication over the Internet and other public networks and serve as a barrier between the Internet and the enterprise network
- New features in versions 4.0 and 3.05 include: VPN packet filtering that provides a method for additional security across the public network, the IPSec standard for security interoperability across the virtual private network (VPN), integration of MicroSystems' CyberPatrol, which allows companies to block undesirable URL, and RealAudio, which allows users to safely receive audio feeds from the Internet.

- In addition to the UNIX and Windows NT platforms, starting in July 1996 Eagle supports the Digital Equipment Corporation Alpha system platforms.
- Eagle is priced between \$7,000 and \$25,000; the price ranges from \$6,500 (up to 50 users) to \$11,000 (from 50-200 users) to \$15,000 for unlimited use for Windows NT.

EagleLAN is a distributed firewall technology that protects departmental networks, including intranets, from unauthorized access by internal users.

- EagleLAN supports Sun, HP, IBM, Data General, and Windows NT operating systems, and is generally priced to end users at \$3,500.

EagleDesk provides secure communications directly to and from networked PCs.

- The product operates on PCs with Windows 95, Windows for Workgroups, or Windows NT, and is generally priced to end users at \$99 per PC client.

EagleMobile (formerly EagleNomad) provides security for remote users utilizing a PC to connect to an internal network or communicate within an intranet.

- EagleMobile provides password protection for the PC, user authentication to prevent unauthorized access to internal network resources, and data encryption to protect the integrity of information transmitted over the Internet or public or private networks.
- The product supports PCs with Windows 95, Windows for Workgroups, or Windows NT, and is generally priced to end-users at \$99 per PC client.

EagleRemote provides network administrators with the ability to secure communications over the Internet and WANs to and from remote networks.

- The product works in conjunction with an Eagle-protected server to provide remote-site network security and remote management and control from a centralized location.
- EagleRemote supports Sun, HP, IBM, Data General, and Windows NT operating systems and is generally priced to end users between \$5,500 and \$22,000.

EagleNetwatch is a three-dimensional visual security monitor software that enables companies to identify network threats by capturing every network host, node, and activity as multicolored, 3-D movies and pictures.

- It integrates network security data from multiple log files and firewalls across an enterprise so that security managers can monitor them from a central console.
- EagleNetwatch is available for Sun Microsystems' Solaris workstations, with future support planned for Hewlett-Packard's HP-UX and Microsoft's Windows NT.
- The complete Netwatch package, including both visualization and software databases, is commercially available for \$6,995, with subsequent add-on licenses of visualization software available for \$3,995.

Hawk provides centralized configuration, monitoring, administration, and management capabilities in support of Raptor's distributed security solution.

EagleConnect, used in all of the company's products, is a virtual private network technology that provides encrypted, authenticated "tunnels" of communication within an organization's network and over a public network. EagleConnect manages the connections between the network security points throughout the entire enterprise.

Clients

Due to Raptor Systems' relationship with its VARs, the majority of its business partners are also company clients. Included in this list are Bell Atlantic Network Integration Services, Hewlett-Packard, PSINet, Siemens Nixdorf Information Systems, and Sprint.

Marketing and Sales

Raptor Systems' marketing strategy is to establish broad initial market penetration of its Eagle firewall and subsequently pursue follow-on sales of additional products across all domains of its customers' enterprise networks.

Raptor works with certain of its larger VARs through alpha programs, and these customers provide product feedback that is channeled into product development and innovation.

Raptor's new product development efforts are focused on enhancements to the company's current suite of products and new network security products, including products that support additional hardware platforms.

Alliances

Raptor's Business Development Group markets directly to strategic VARs who market and sell the company's products under the Raptor name.

Examples of these VARs include Anixter, Bell Atlantic Network Integration Services,

Hewlett-Packard, PSINet, Siemens Nixdorf Information Systems, and Sprint.

Raptor also has alliances and partnerships with the following companies:

- Compaq Computer Corp. and Raptor Systems have a comprehensive Network Security Partnership that grants Compaq various OEM rights to distribute the Eagle NT product line on any Compaq server.
- Coopers & Lybrand L.L.P. and Raptor have a strategic business partnership that will result in Coopers & Lybrand delivering network security services to complement Raptor's enterprise network security product line.
- Hewlett-Packard and Raptor Systems have a joint marketing and technical agreement under which HP offers Raptor's Eagle family of Internet and LAN security firewall software with its HP 9000 servers and workstations.
- Intergraph Computer Systems and Raptor have a partnership agreement under which Raptor's Eagle NT firewall provides security functionality for Intergraph's line of Web server solutions.
- Digital Equipment Corporation and Raptor reached an agreement in July 1996 under which Digital's Services Division will resell and integrate Raptor's Eagle family of information security products as part of its worldwide Internet Services portfolio.
- Siemens Nixdorf has ported the full line of Eagle products onto the RM platform as part of its Internet implementation strategy.
- Shiva licenses the EagleRemote product for its remote access services.

Competition

Raptor Systems' current competitors include America Online, Inc.'s Advanced Network and Services subsidiary, Border Network Technologies, CheckPoint Software Technology, Cisco Systems, Digital Equipment Corporation, IBM, Milkyway Networks, Morningstar Technologies, Network Systems, Secure Computing, Sun Microsystems, Trusted Information Systems, V-One, and Microsoft.

INPUT Assessment

Raptor Systems' strengths include:

- Leadership position in Windows NT firewall market
- Timely and innovative products like EagleNetwatch
- The explosive growth of the network security industry

Future challenges include:

- Establishing a customer base amidst intense competition, including industry players
- Continued product development and refinement
- Continuation of recent profitability



COMPANY HIGHLIGHT

REALTRON CORPORATION

24065 Five Mile Road
Detroit, MI 48239
(313) 255-1200

Jack Jominy, President
Private Corporation
Total Employees: 310
Total Revenue, Fiscal Year End
4/30/83: \$20,000,000*

THE COMPANY

- Realtron Corporation, founded in 1967, provides processing services, computerized photo listing books, and applications software products for the real estate industry.
- Fiscal 1983 revenue is estimated at \$20 million, an 11% increase over 1982 revenue of \$18 million. A four-year revenue summary follows:

REALTRON CORPORATION FOUR-YEAR REVENUE SUMMARY (\$ thousands)

ITEM \ FISCAL YEAR	4/83	4/82	4/81	4/80
Revenue	\$ 20,000	\$ 18,000	\$ 15,000	\$ 12,000
Percent increase over previous year	11%	20%	25%	NA

- Realtron has one wholly owned subsidiary, Realtron Publishing Corporation, also headquartered in Detroit. This subsidiary is responsible for the company's photo listing book publishing services.
- Realtron's 310 employees are distributed as follows:

Marketing/sales	30
Data processing operations	19
Programmers	11
Listing book operations	225
Administration	<u>25</u>
	310
- Major competitors of Realtron include McGraw-Hill, Inc. (Multi-List/McGraw-Hill), Moore Business Forms (International Graphics), and Planning Research Corporation (PRC Realty Systems).

*Company estimate

KEY PRODUCTS AND SERVICES

- One hundred percent of Realtron's fiscal 1983 revenue was derived from processing services.
 - An estimated two-thirds of revenue was derived from remote batch processing of property listing information and the generation of photo listing books for Boards of Realtors® and their Multiple Listing Services (MLS).
 - The remainder of revenue was derived from on-line processing and inquiry services for property listing information.
- Realtron provides computerized photo listing book services to approximately 170 MLS and Boards of Realtors.
 - Realtron installs a Televideo microcomputer, CRT, or Texas Instruments 740 or 745 terminal at the client's site, which is used to transmit current and updated property listing information for all properties listed for sale within the Board's territory to Realtron's computer center in Detroit.
 - Based on a predetermined format selected by the client, Realtron generates a catalog of property listings from the transmitted data.
 - The number of listings ranges from 350 to over 12,000 depending on the size of the Board.
 - Catalogs can be arranged with one to fifteen listings per page.
 - Each listing typically includes a photo, purchase price, square footage, number and type of rooms, loan information, and a variety of other items.
 - The photo listing section can be arranged according to indices specified by the client, such as purchase price or number of bedrooms.
 - Allowances are made for eight to fifteen information pages for bulletins, announcements, or instructions.
 - Pricing for this service includes the use of the terminals and is based on the number and size of catalogs the client orders. Most clients have updated issues printed weekly, though the number of clients converting to bimonthly and monthly catalogs is increasing due to publishing costs.
 - In November 1981 Realtron introduced a WATS service for smaller Boards that could not justify costs of installing a leased line for data transfer.

REALTRON CORPORATION

- Realtron installs a Televideo TS802H microcomputer at the client site. The client can enter property listing information off-line and transmit via the WATS line to Realtron's computer center.
- Realtron provides on-line services to over 40,000 real estate agents representing 80 Boards of Realtors who require daily updates on property information in addition to their photo listing subscription.
 - Applications are available as follows:
 - Listing Status checks the status of a particular listing.
 - Current Listing Search searches current listings by specified features.
 - Sold Comparable Search searches for comparable listings based on specified features of a sold property.
 - Activity Bulletin reports new listings, new comparables sold, new changes, and expired properties.
 - Message Programs sends messages via the terminal to other realty offices.
 - Street Search searches for properties by street name.
 - Listing Match provides 10 property listings matching the features of a particular property.
 - Pending Search searches for pending listings.
 - Broker Current Search searches only for broker's own firm listings.
 - Broker Sold Search searches only for firm's sold properties.
 - Broker Activity Bulletin searches for firm's new listings, comparables, changes, and expired properties.
 - Prospect Search establishes a file to match current or future listings with client specifications.
 - Qualification Programs uses prospect income data to determine qualification for a specific loan amount based on type of loan.
 - Home and Land Analysis demonstrates tax and equity benefits of ownership.
 - Loan Amortization produces loan payment schedules.

REALTRON CORPORATION

- Investment Analysis demonstrates the benefits of purchasing investment property.
- Deed Transfer Data, introduced in late 1982, contains files on all properties in a given community with all public record information including appraised value, taxes, and property dimensions. This service is currently available in selected areas of California, Florida, Ohio, Texas, and in Washington, D.C.
- The range in use of this service varies by the size of the realty firm. The average fee is \$160 per month.
- Realtron has recently introduced applications software for installation on the Televideo microcomputer, making on-site processing available in addition to Realtron's on-line services. Applications include:
 - Membership information.
 - Mailing lists, rosters, and labels.
 - Billing and accounts receivable.
 - Journals and aging reports.
 - General ledger.

INDUSTRY MARKETS

- One hundred percent of Realtron's fiscal 1983 revenue was derived from the real estate industry.

GEOGRAPHIC MARKETS

- One hundred percent of Realtron's fiscal 1983 revenue was derived from the U.S.
- Branch offices are located in Dallas, New York City, and Pleasanton (CA).
- Realtron Publishing Corporation has publishing offices in Redford (MA), Pompano Beach (FL), and Norwell (MA).

COMPUTER HARDWARE AND SOFTWARE

- Realtron has the following systems installed at its headquarters in Detroit:
 - 2 NAS 6600s, operating under DOS/VS.
 - 1 Tandem NonStop, operating under Guardian.
- Clients can access Realtron's computers via leased or WATS lines.

**COMPANY
PROFILE**

INPUTSM

**REALWORLD
CORPORATION**

282 Loudon Road
Concord, NH 03302-2051
Phone: (603) 224-2200
Fax: (603) 224-1955

President & CEO: Murray P. Fish
Status: Private Corporation
Total Employees: 105
Total Revenue: \$12 million*
Fiscal Year End: 6/30/93

* INPUT estimate

Key Points

- RealWorld Corporation is one of the original accounting software developers in the microcomputer industry.
- In July 1993, Murray P. Fish, former RealWorld chief operating officer and chief financial officer, was appointed president and chief executive officer. Mr Fish replaced Larry Brennan, who has moved on to pursue a new business opportunity with a start-up software company in New Hampshire.
- RealWorld's first Windows-based product started shipping in April 1993.

**Company
Description**

RealWorld Corporation, founded in 1980, provides business and accounting software to businesses. Products are available for first-time users through large-sized businesses.

RealWorld's products are available for most popular computers and operating systems such as IBM DOS, Novell, UNIX, and RS/6000. All products are written in Micro Focus COBOL.

Products are marketed through a network of more than 2,000 value-added resellers. The company has more than 380,000 packages installed in 53 countries worldwide.

Strategy

RealWorld's strategy for growth includes restructuring its value-added reseller program to better support resellers making annual purchases in excess of \$5,000, and increasing its investment in new technology and product development.

Products under development include version 7.0 of the RealWorld Accounting and Business Software products.

Financials

INPUT estimates RealWorld's fiscal 1993 revenue was \$12 million, down from fiscal 1992 revenue.

**Market
Financials**

RealWorld's software products address the needs of small to large businesses. Companies using RealWorld software have revenues ranging from \$500,000 to more than \$20 million per year, and from one to more than 1,000 employees.

One hundred percent of RealWorld's fiscal 1993 revenue was derived from applications software products (94%) and associated support services (6%).

**Geographic
Markets**

Approximately 95% of revenue is derived from the U.S. and 5% from international sources.

RealWorld's only office is in Concord (NH).

**Key Products
and Services**

RealWorld Accounting and Business Software consists of a fully integrated line of 17 accounting and business software packages that can be installed independently or integrated in almost any combination.

- The software is available for DOS network, UNIX, XENIX and AIX environments.
- Packages available include:
 - Accounts Payable
 - Accounts Receivable
 - Check Reconciliation
 - Data Export Manager
 - Fixed Assets
 - General Ledger
 - Inventory Control
 - Job Cost
 - Order Entry/Billing
 - Payroll
 - Professional Invoicing
 - Professional Time & Billing
 - Purchase Order
 - REMOTELink
 - Report Writer
 - Sales Analysis
 - Sales Management Solutions

In addition to the higher-end modules, RealWorld also markets its software products to smaller companies with a line of accounting and business products for retail, service and general business. These packages are available for DOS/network environments only and include the following:

- RealWorld Point-of-Sale Plus^R
- RealWorld Practical Accounting SystemTM
- RealWorld Service Manager
- Custom Reporting

RealWorld Spectrum Accounting, released in April 1993, was developed specifically for small businesses operating in a Windows environment.

RealWorld also distributes other products that assist users in understanding accounting and business software, including Financial Competence, a training software package from Competence Software.

Support services provided by RealWorld include:

- Training
- Authorized training centers
- Consultant program
- Dealer direct mail program

- Free dealer support
- End-user support subscriptions
- Regularly available updates for a small fee

Clients

Notable users of RealWorld's software products include The New England Patriots, Boy Scouts of America, Budget Rent-a-Car, Hertz Rent-a-Car, Nestle Food Corporation, and ServiceStar Hardware.

Marketing and Sales

RealWorld markets its software through more than 2,000 value-added resellers, who not only sell their software but customize it to meet the needs of specific users.

The company's large base of resellers has created hundreds of specialized industry packages to interface with RealWorld's line of general accounting and business applications.

In addition to value-added resellers, several major hardware companies--Televideo, DEC, and Tandy Corporation--have privately labeled the software.

Alliances

In addition to its value-added resellers, RealWorld has alliances/marketing agreements with various other vendors:

- IQ Software (Intelligent Query Report Writer)
- Magic Software Enterprises, Inc. (ISAM gateway software)
- Best Programs, Inc. (FASTM and FAS2000TM fixed assets packages)
- National Payment Corporation (direct deposit software)

COMPANY PROFILE

REALWORLD CORPORATION

282 Loudon Road
P.O. Box 2051
Concord, NH 03302-2051
(603) 224-2200
(800) 678-6336

Larry Brennan, President and CEO
Private Corporation
Total Employees: 157
Total Revenue, Fiscal Year End
6/30/91: \$16,800,000

The Company

RealWorld Corporation, formed in 1980, provides a range of microcomputer accounting and business application software products and sells primarily to value-added resellers and dealers, and large end users.

- RealWorld was formed in 1980 as Micro Business Software, Inc. In 1982, the company started using the name RealWorld Software for its line of accounting software products, and in 1983 changed its name to RealWorld Corporation.
- The impetus for the company's creation came when its founder was approached by Radio Shack to transport RealWorld's accounting product to the TRS-80 computer. This was RealWorld's first contract. Radio Shack continues to be RealWorld's largest single customer.
- RealWorld has operated as a private company since its inception, except for the period from late 1988 to mid-1990 when it operated as a subsidiary of Interactive Financial Services, Inc. (IFSI) of Georgia.

RealWorld's fiscal 1991 revenue reached approximately \$16.8 million, an 8% increase over fiscal 1990 revenue of \$15.6 million. The company has achieved an average annual revenue growth rate of 11.7% over the past five years and has operated profitably since 1980.

Key Products and Services

One hundred percent of RealWorld's fiscal 1991 revenue was derived from application software products (94%) and associated support services (6%).

The RealWorld Accounting and Business Software product line is available for MS-DOS, networks, UNIX, and XENIX environments.

- Modules include:
 - Accounts Receivable
 - Accounts Payable
 - General Ledger
 - Payroll
 - Inventory Control
 - Order Entry/Billing
 - Purchase Order
 - Sales Analysis
 - Professional Invoicing
 - Check Reconciliation
 - Sales Management Solutions
 - Job Cost
 - Report Writer
 - 4-in-1 Basic Accounting (DOS only)
 - Point-of-Sale Plus (DOS/network only)
 - Practical Accounting System (DOS/network only)
 - RealWorld Service Manager (DOS/network only)
- RealWorld has over 300,000 software packages installed worldwide.

Support services provided by RealWorld include training, authorized training centers, a consultant program, a dealer direct mail program, free dealer support, end-user support subscriptions, and regularly available updates for a small fee.

Industry Markets

RealWorld markets its software products primarily to OEMs, value-added resellers, and dealers. Approximately 2% of revenue is derived from sales to large end users.

In addition to Radio Shack, several OEMs have private-labeled RealWorld software over the years, including Televideo, DEC, and Monroe. RealWorld has also developed strategic relationships with Altos, Wyse, NEC, and others.

Reseller clients also include Absolute Logic, ComputerPro, J. Flynn & Associates, Da-Tronics, Software Solutions, Synchronics, Passport Software, and ReMacs.

End-user clients include Boy Scouts of America, SERVISTAR, Trane Corp., and the Boston Celtics.

**Geographic
Markets**

Approximately 95% of RealWorld's fiscal 1991 revenue was derived from the U.S. and 5% from international sources.

In addition to corporate headquarters in Concord (NH), RealWorld has a research and development office in Clearwater (FL).



COMPANY PROFILE

REALWORLD CORPORATION

282 Loudon Road
P.O. Box 2051
Concord, NH 03302-2051
(603) 224-2200

Larry Brennan, President and CEO
Private Corporation
Total Employees: 175
Total Revenue, Fiscal Year End
6/30/90: \$15,700,000

The Company

RealWorld Corporation, formed in 1980, provides a range of microcomputer accounting and business application software products primarily to value-added resellers and dealers and large end users.

- RealWorld was formed in 1980 as Micro Business Software, Inc. by David Gale, who was also one of the founders of MCBA, a developer of accounting software for minicomputers. In 1982, the company started using the name RealWorld Software for its line of accounting software products, and in 1983 changed its name to RealWorld Corporation.
- The impetus for the company's creation came when David Gale was approached by Radio Shack to transport their accounting product to the TRS-80 computer. This was RealWorld's first contract. Radio Shack continues to be RealWorld's largest single customer.
- RealWorld has operated as a private company since its inception, except for the period from late 1988 to mid-1990 when it operated as a subsidiary of Interactive Financial Services, Inc. (IFSI) of Georgia.

RealWorld's fiscal 1990 revenue reached approximately \$15.7 million, a 2% decrease from fiscal 1989 revenue of \$16.1 million. The company has achieved an average annual revenue growth rate of 11.7% over the past five years and has operated profitably since 1980.

Key Products and Services

One hundred percent of RealWorld's fiscal 1990 revenue was derived from application software products (94%) and associated support services (6%).

The RealWorld Accounting and Business Software product line is available for MS-DOS, networks, UNIX, XENIX, and VMS environments.

- Modules include:
 - Accounts Receivable
 - Accounts Payable
 - General Ledger
 - Payroll
 - Inventory Control
 - Order Entry/Billing
 - Purchase Order
 - Sales Analysis
 - Professional Invoicing
 - Check Reconciliation
 - Sales Management Solutions (no VMS product)
 - Job Cost
 - 4-in-1 Basic Accounting (DOS only)
 - Point-of-Sale Plus (DOS only)
 - Report Writer
- RealWorld has over 250,000 software packages installed worldwide.

Support services provided by RealWorld include training, authorized training centers, a consultant program, a dealer direct mail program, free dealer support, end-user support subscriptions, and regularly available updates for a small fee.

Industry Markets

RealWorld markets its software products primarily to OEMs, value-added resellers, and dealers. Approximately 2% of revenue is derived from sales to large end users.

In addition to Radio Shack, several OEMs have private labeled RealWorld software over the years, including Televideo, DEC, and Monroe. RealWorld has also developed strategic relationships with Altos, Wyse, NEC, and others.

Reseller clients also include Absolute Logic, ComputerPro, J. Flynn & Associates, Da-Tronics, Software Solutions, Synchronics, Passport Software, and ReMacs.

End-user clients include Boy Scouts of America, SERVISTAR, Trane Corp., and the Boston Celtics.

**Geographic
Markets**

Approximately 95% of RealWorld's fiscal 1990 revenue was derived from the U.S. and 5% from international sources.

In addition to corporate headquarters in Concord (NH), RealWorld has a research and development office in Clearwater (FL).

COMPANY PROFILE

REDSHAW, INC.
Foster Plaza Ten
680 Anderson Drive
Pittsburgh, PA 15220
(412) 937-3661

Robert Thompson, Jr., President and CEO
Subsidiary of Hartford Insurance Group, a
Subsidiary of ITT
Total Employees: 250
Total Revenue, Fiscal Year End
12/31/87: \$30,000,000

The Company

Redshaw, Inc., incorporated in 1976, evolved from the automation of the Thompson Insurance Agency. Redshaw began marketing software packages to independent property and casualty insurance agents in 1977 and now offers turnkey systems to insurance agencies and insurance brokerage firms.

- Redshaw was acquired by Hartford Fire Insurance Company, a subsidiary of ITT, in August 1982 and now operates as an independently managed subsidiary of The Hartford Insurance Group. Redshaw is also jointly owned by three minority partners: St. Paul Fire and Marine Insurance Company, Crum and Foster, and The Kemper Group.

Redshaw's 1987 revenue was approximately \$30 million, the same as 1986 revenue of \$30 million.

As of December 1987, Redshaw had approximately 250 employees in the U.S. and Canada.

Redshaw considers itself to be one of the largest suppliers of full-function automation systems for the insurance industry. Redshaw has an installed base of approximately 3,500 systems and 15,000 workstations.

In May 1988, Redshaw acquired the RaterAid[®] commercial-lines-rating software product from Simple Software.

Competitors include ARC/AMS, AGENA Corporation, Applied Systems, Gemini, and Insurnet.

Key Products and Services

One hundred percent of Redshaw's revenue is derived from turnkey systems, associated support services, and hardware/software upgrades to existing systems.

Redshaw provides three families of turnkey systems based on the functionality and system size requirements of the insurance agency.

- The Classic System is based on Wang 2200 architecture and Release 8.5 or earlier versions of Redshaw's Comprehensive Insurance System software.
 - The Comprehensive Insurance System consists of over 150 programs addressing applications specific to the independent insurance agent, including the complete policy information; all customer, company, and producer accounting; marketing support; premium calculations; claims processing; printing of forms; premium tables; and many more capabilities.
 - The Classic System has an installed user base of approximately 1,800 agencies. The system is based on the older Wang architecture. Redshaw will continue to provide minor enhancements to the system as its inherent software and hardware limitations permit.
 - Existing Classic customers are upgrading to the Master System at a rate of 35 to 50 per month. It is expected that by the end of 1988 approximately 60% of Classic users will have upgraded to the Master System.
- The Master System is based on Wang CS architecture with VLSI technology and the DS Data Storage cabinet and Winchester drives. The Master System is targeted to agencies that are more marketing intensive.
 - The Master System offers all of the features of the Comprehensive Insurance System, including capabilities for supporting all current ACORD paper forms, user-designed forms, and the Book of Business transfer program. The Master System also allows users to interface with leading carriers and Insurance Value Added Network Services (IVANS).

- The latest release of the Master software included enhancements to the following functions:
 - TRAX enhancements include a notepad feature, automatic creation of preprinted ISO simplified forms and nonsimplified versions, and additional MEMO and user functions to use the full 47 lines of PAGEEDIT and DATAMERGE.
 - DATAMERGE functions include the ability to create documents that merge up to nine RISKFILES, the MERGE document length has been doubled, and the MERGE process can be initiated from the RISKFILE screen.
 - The FILE processing functions allow the user to lock out any changes to specified columns during month-end closing and also include a code-checking feature.
 - PAGEEDIT allows copying of complete pages and enhanced editing of the document.
- The Master microADVANTAGE™ system can handle up to 16 users of the system.
- The Master ADVANTAGE™ system can support a maximum of 48 users.
- The Master Series/2™ system is the largest system and can support a maximum of 256 users on the system.
- There are approximately 1,500 installations of the Master System.
- The ELITE System is designed for agencies that handle more of the administrative functions for an insurance company. These groups do an extreme amount of processing.
 - The ELITE ADVANTAGE™ system can support 48 users.
 - The ELITE Series/2™ system can support a maximum of 256 users.
 - There are approximately 200 ELITE Systems installed.
 - Redshaw expects the microADVANTAGE™ system to be available for the ELITE family by the end of 1988.

- The ELITE family of systems is currently only available as an upgrade to existing Redshaw customers. Redshaw is expecting to make this family available to new customers some time during the first quarter of 1989.
- Optional programs available for all Master and ELITE users include Fastpak to speed up backup and archiving time, an Advanced Accounting Package with company and accounts payable, Producer Accounts Payable/Receivable module, Remote Diagnostics, General Ledger Report Writer, and SuperLink/1 terminal emulation package to enable agents to run the Wang and IBM microcomputers as integrated workstations with Redshaw systems.

In May 1988, Redshaw signed an agreement with Simple Software to acquire the RaterAid[®] commercial lines rating software product.

- William G. Mitchell, founder of Simple Software, joined Redshaw to enhance RaterAid, integrate the package with other Redshaw systems, and develop Redshaw's rating strategy.
- RaterAid supports quotes and multiple quotes for general liability, fire, commercial auto, workers' compensation, and commercial property.
- RaterAid operates on Wang 2200- and CS/DS-based systems.
- RaterAid has a user base of over 100 installed rating systems in 35 states.

Redshaw currently provides hardware and software interface options with its systems that permit clients to communicate with approximately 35 insurance carriers for policy rating, policy issuance, billing, and claims information. Redshaw systems are fully compatible with Insurance Value Added Network Services (IVANS).

Redshaw contracts directly with its clients for hardware and software maintenance services.

- Wang hardware maintenance is usually performed by Wang field service personnel. Peripheral equipment (Genicom printers, WYSE terminals, Universal Data Systems and Micom communications equipment) is usually serviced by the OEM field service personnel through third-party maintenance agreements with Redshaw.

- Redshaw offers clients UPTIME and UPTIME PLUS maintenance programs that guarantee system availability (95% to 98%) and service response times from two to four hours. An 800 telephone service is available to clients for hardware and software support.
- Redshaw also provides ongoing educational workshops, training manuals, video and audio training cassettes, and an audit program to its clients.

In April 1988, Redshaw announced a comprehensive insurance training program for Customer Service Representatives available through the Pittsburgh Business Institute.

Industry Markets

Redshaw derives 100% of its revenue from independent property and casualty insurance agents and insurance brokerage firms.

- The majority of customers have annual premium volumes of from \$1 million to \$30 million.

Geographic Markets

Approximately 85% of 1987 revenue was derived from the U.S., and 15% from Canada.

U.S. sales offices are located in Atlanta, Boston, Chicago, Dallas, Philadelphia, and Los Angeles.

Canadian sales and service activities are conducted by CICS/Redshaw, a wholly owned subsidiary. CICS/Redshaw offices are located in Montreal and Toronto.

Computer Hardware

Redshaw has Wang 2200 and CS/DS Series minicomputers and Wang microcomputers installed at various offices in the U.S. and Canada to support operations.



COMPANY PROFILE

REDSHAW, INC.
103 Yost Boulevard
Pittsburgh, PA 15221
(412) 829-2100

Robert Thompson, Jr., President and
CEO
Subsidiary of Hartford Insurance Group,
a Subsidiary of ITT
Total Employees: 275
Total Revenue, Fiscal Year End
12/31/85: \$40,000,000*

THE COMPANY

- Redshaw, Inc., incorporated in 1976, evolved from the automation of the Thompson Insurance Agency. Redshaw began marketing software packages to independent property and casualty insurance agents in 1977 and now offers turnkey systems to insurance agencies and insurance brokerage firms.
- Redshaw was acquired by Hartford Fire Insurance Company, a subsidiary of ITT, in August 1982 and now operates as an independently managed subsidiary of The Hartford Insurance Group. Redshaw is also jointly owned by three minority partners: St. Paul Fire and Marine Insurance Company, Crum and Forster, and The Kemper Group.
- Redshaw's 1985 revenue was approximately \$40 million, the same as it was in 1984. The company estimates 1986 revenue will reach \$45 million.
- As of December 1985, Redshaw had approximately 275 employees in the U.S. and Canada, segmented as follows:

Marketing/sales	110
Software services/customer	
support/education/installation	95
Research and development	35
General and administrative	<u>35</u>
	275

- Competitors include ARC/AMS, AGENA Corporation, and Insurnet, Inc.

KEY PRODUCTS AND SERVICES

- One hundred percent of Redshaw's revenue is derived from turnkey systems, associated support services, and hardware/software upgrades to existing systems.
- Through 1985 Redshaw's primary product was the Comprehensive Insurance System, a total agency management information turnkey system integrating file retrieval, accounting, and word processing functions.

*Company estimate

- The system, with over 3,000 installations throughout the U.S. and Canada, runs on Wang 2200 T/LVP/SVP/MVP/MicroVP Series computers.
- The system consists of over 150 programs addressing applications specific to the independent insurance agent, including the following:
 - Complete policy information, including daily accounting, claims, and follow-up.
 - All customer, company, and producer accounting.
 - Marketing support via profiling and prospecting.
 - Earned premium calculations.
 - Claims processing.
 - Printing of renewal request forms, invoices, letters, ACORD forms, and endorsement requests.
 - Premium tables for rate calculations and quotations.
 - Efficiency analysis by employee, producer, class, and company.
 - Detailed account histories.
 - Previous period comparisons.
 - New business, cancellation, renewal, and endorsement transaction registers and production summaries.
 - Word processing.
- The Comprehensive Insurance System supports from 1 to 48 CRT workstations and multiple printers. Turnkey system prices range from \$15,000 to over \$100,000 with an average cost of \$35,000.
- The target market for the product includes agencies and companies with annual premium volumes of from \$500,000 to \$10 million, processing up to 50,000 policies a year.
- In November 1984 Redshaw introduced the Series/2^{T.M.}, a turnkey system targeted to property and casualty insurance agencies and brokerages with annual premium volumes over \$10 million.
- The Series/2 uses a version of the Wang 2200 computer with 600 nanosecond processing speed and is designed specifically for use in a multi-processing environment.
- The Series/2 provides all the features of the Redshaw Comprehensive Insurance System, plus the following:
 - The system supports up to 240 Wang 2236 workstations or Professional Computers, allowing multiple offices of a single firm to share a centralized data base. The system also provides users with the ability to support branch offices that operate either independently or interactively in conjunction with the home office.

- Advanced management reporting capabilities permit the design of specialized reports, including budget and financial comparisons for any designated period of time.
- The architecture of the system allows flexibility in structuring multi-office and/or multi-department operations, including general ledger. All forms of profit center analysis and a range of consolidations are possible. Direct debit accounting and mass merchandising billing functions are also available.
- The storage capacity of the Series/2 exceeds 250,000 policy files with additional storage as an option.
- The Series/2 ranges in price from \$100,000 to \$400,00 with an average system price of \$150,000. There are currently 35 Series/2 systems installed.
- In June 1985 Redshaw introduced the MicroPlusTM system.
 - MicroPlus is based on the Wang 2200 MicroVP computer and supports one to 12 terminals. It is targeted to agencies with \$500,000 to \$3 million in annual premium volume.
 - MicroPlus software features include those available with the Comprehensive Insurance System.
 - The system ranges in price from \$15,000 to \$50,000. There are currently approximately 250 MicroPlus systems installed.
- In February 1986 Redshaw announced Redshaw AdvantageTM, a turnkey system targeted to agencies with \$2 million to \$10 million in annual premium volume.
 - Advantage is based on the Wang MicroVP computer and supports up to 48 CRT or PC workstations.
 - Advantage incorporates software features available with the Comprehensive Insurance System plus telecommunications capabilities.
 - Advantage is also available as an upgrade option to MicroPlus.
- Redshaw currently provides hardware and software interface options with its systems that permit clients to communicate with approximately 30 insurance carriers for policy rating, policy issuance, billing, and claims information. Redshaw systems are fully compatible with Insurance Value Added Network Services (IVANS).
- Redshaw contracts directly with its clients for hardware and software maintenance services.

- Wang hardware maintenance is usually performed by Wang field service personnel. Peripheral equipment (Centronics printers; Universal Data Systems and Micom communications equipment) is usually serviced by third-party maintenance vendors.
- Redshaw offers clients UPTIME and UPTIME PLUS maintenance programs that guarantee system availability (95% to 98%) and service response times. An 800 telephone service is available to clients for hardware and software support.
- Redshaw also provides ongoing educational workshops and training manuals to its clients.

INDUSTRY MARKETS

- Redshaw derives 100% of its revenue from independent property and casualty insurance agents and insurance brokerage firms.
- The majority of customers have annual premium volumes of from \$1 million to \$20 million.

GEOGRAPHIC MARKETS

- Approximately 90% of 1985 revenue was derived from the U.S. and 10% from Canada.
- U.S. sales offices are located in Atlanta, Boston, Chicago, Dallas, Philadelphia (PA), and Los Angeles.
- The Advanced Systems Division, which sells the Series/2 product to large agencies and nationwide brokers, is located in Pittsburgh.
- Canadian sales and service activities are conducted by CICS/Redshaw, a wholly owned subsidiary. CICS/Redshaw offices are located in Montreal and Toronto.

COMPUTER HARDWARE

- Redshaw has over 50 Wang 2200 Series minicomputers and Wang microcomputers installed at its various offices in the U.S. and Canada.

COMPANY HIGHLIGHT

REDSHAW, INC.
103 Yost Boulevard
Pittsburgh, PA 15221
(412) 829-2100

Robert Thompson, Jr., President and
CEO
Subsidiary of Hartford Insurance Group,
a Subsidiary of ITT
Total Employees: 300
Total Revenue, Fiscal Year End
12/31/84: \$40,000,000*

THE COMPANY

- Redshaw, Inc., incorporated in 1976, evolved from the automation of the Thompson Insurance Agency. Redshaw began marketing software packages to independent property and casualty insurance agents in 1977 and now offers turnkey systems to insurance agencies and insurance brokerage firms.
 - Redshaw was acquired by Hartford Fire Insurance Company, a subsidiary of ITT, in August 1982 and now operates as an independently managed subsidiary of The Hartford Insurance Group. Redshaw is also jointly owned by three minority partners: St. Paul Fire and Marine Insurance Company, Crum and Forster, and The Kemper Group.
- Redshaw's 1984 revenue was approximately \$40 million. The company estimates 1985 revenue will remain at \$40 million.
- As of December 1984, Redshaw had approximately 300 employees in the U.S. and Canada, segmented as follows:

Marketing/sales	120
Software services/customer support/education/installation	100
Research and development	40
General and administrative	<u>40</u>
	300
- Redshaw currently has approximately 300 employees.
- Competitors include Aetna Technical Services (a subsidiary of Aetna Life & Casualty) and various other insurance companies.

KEY PRODUCTS AND SERVICES

- One hundred percent of Redshaw's revenue is derived from turnkey systems, associated support services, and hardware/software upgrades to existing systems.

*Company estimate

- Through 1984 Redshaw's primary product was the Comprehensive Insurance System, a total agency management information turnkey system integrating file retrieval, accounting, and word processing functions.
 - The system, with over 3,000 installations throughout the U.S. and Canada, runs on Wang 2200 T/LVP/SVP/MVP Series minicomputers.
 - The system consists of over 150 programs addressing applications specific to the independent insurance agent, including the following:
 - Complete policy information, including daily accounting, claims, and follow-up.
 - All customer, company, and producer accounting.
 - Marketing support via profiling and prospecting.
 - Earned premium calculations.
 - Claims processing.
 - Printing of renewal request forms, invoices, letters, ACORD forms, and endorsement requests.
 - Premium tables for rate calculations and quotations.
 - Efficiency analysis by employee, producer, class, and company.
 - Detailed account histories.
 - Previous period comparisons.
 - New business, cancellation, renewal, and endorsement transaction registers and production summaries.
 - Word processing.
 - The Comprehensive Insurance System supports from 1 to 48 CRT workstations and multiple printers. Turnkey system prices range from \$15,000 to over \$100,000 with an average cost of \$35,000.
 - The target market for the product includes agencies and companies with annual premium volumes of from \$500,000 to \$10 million, processing up to 25,000 policies a year.
- In November 1984 Redshaw introduced the Series/2, a turnkey system targeted to property and casualty insurance agencies and brokerages with annual premium volumes over \$10 million.
 - The Series/2 uses a version of the Wang 2200 MVS computer with 600 nanosecond processing speed and is designed specifically for use in a multi-processing environment.
 - The Series/2 provides all the features of the Redshaw Comprehensive Insurance System, plus the following:
 - The system supports up to 240 Wang 2236 workstations or Professional Computers, allowing multiple offices of a single firm to share a centralized data base. The system also provides users with the ability to support branch offices that operate either independently or interactively in conjunction with the home office.

- Advanced management reporting capabilities permit the design of specialized reports, including budget and financial comparisons for any designated period of time.
- The architecture of the system allows flexibility in structuring multi-office and/or multi-department operations, including general ledger. All forms of profit center analysis and a range of consolidations are possible. Direct debit accounting and mass merchandising billing functions are also available.
- The storage capacity of the Series/2 exceeds 250,000 policy files with additional storage as an option.
- The Series/2 ranges in price from \$100,000 to \$400,00 with an average system price of \$150,000. There are currently 35 Series/2 systems installed.
- In June 1985 Redshaw introduced the MicroPlusTM system.
 - MicroPlus is based on the Wang MicroVP computer and supports one to 16 terminals. It is targeted to agencies with \$500,000 to \$10 million in annual premium volume.
 - MicroPlus software features include those available with the Comprehensive Insurance System.
 - The system ranges in price from \$15,000 to \$50,000. There are currently approximately 250 MicroPlus systems installed.
- Redshaw currently provides hardware and software interface options with its systems that permit clients to communicate with approximately 50 insurance carriers for policy rating, policy issuance, billing, and claims information. Redshaw systems are fully compatible with Insurance Value Added Network Services (IVANS).
- In January 1985 Redshaw announced it had signed an agreement with Programming Resources Company of Hartford (CT) for the development of integrated personal lines and commercial lines rating packages for Redshaw systems.
 - Users will have two rating options: rating for specific carriers and comparative rating for multiple carriers.
 - Programming Resources will provide rate table maintenance to all customers.
- Redshaw contracts directly with its clients for hardware and software maintenance services.

REDSHAW, INC.

- Wang hardware maintenance is usually performed by Wang field service personnel. Peripheral equipment (Centronics printers; Universal Data Systems and Micom communications equipment) is usually serviced by third-party maintenance vendors.
 - Redshaw offers clients UPTIME and UPTIME PLUS maintenance programs that guarantee system availability (95% to 98%) and service response times. An 800 telephone service is available to clients for hardware and software support.
 - Redshaw also provides ongoing educational workshops and training manuals to its clients.
- Redshaw provides system financing through Redshaw Credit Corporation.

INDUSTRY MARKETS

- Redshaw derives 100% of its revenue from independent property and casualty insurance agents and insurance brokerage firms.
 - The majority of customers have annual premium volumes of from \$1 million to \$20 million.

GEOGRAPHIC MARKETS

- Approximately 85% of 1984 revenue was derived from the U.S. and 15% from Canada.
- U.S. sales offices are located in Atlanta, Burlington (MA), Chicago, Dallas, Wayne (PA), and Los Angeles.
 - The Advanced Systems Division, which sells the Series/2 product to large agencies and nationwide brokers, is located in Pittsburgh.
- Canadian sales and service activities are conducted by CICS/Redshaw, a wholly owned subsidiary. CICS/Redshaw offices are located in Montreal and Toronto.

COMPUTER HARDWARE

- Redshaw has over 50 Wang 2200 Series minicomputers and Wang microcomputers installed at its various offices in the U.S. and Canada.

COMPANY HIGHLIGHT

REDSHAW, INC.
103 Yost Boulevard
Pittsburgh, PA 15221
(412) 829-2100

Robert Thompson, Jr., President and
CEO
Subsidiary of Hartford Fire Insurance
Company, a subsidiary of ITT
Total Employees: 105
Total Revenue, Fiscal Year End
12/31/82: \$15,500,000*

THE COMPANY

- Redshaw, Inc., incorporated in 1976, evolved from the automation of the Thompson Insurance Agency. Redshaw began marketing software packages to property and casualty independent insurance agents in 1977 and now offers a turnkey version of the product.
 - Redshaw was acquired by Hartford Fire Insurance Company, a subsidiary of ITT, in August 1982 and now operates as a wholly owned subsidiary.
- INPUT estimates Redshaw's calendar 1982 revenue at \$15.5 million. Redshaw management projects revenue of \$20 million for 1983.
- Redshaw acquired Computer Agency Accounting of Pittsburgh, W/R Systems of Burlington (MA), and Wade-Hampton Corporation of Portland during September and October of 1982. The companies, with combined revenue of approximately \$10 million, operated as Wang OEMs and associate distributors of Redshaw software, marketing turnkey systems to the end user.
 - As part of the acquisition, Redshaw assumed the Wang marketing agreements and began offering turnkey systems as its primary product.
- Redshaw's 105 employees are distributed as follows:

Marketing/sales	55
Software services/ customer support	25
Research and development	5
General and administrative	<u>20</u>
	105
- The company expects to employ 100 people in sales by the end of 1983.

*INPUT estimate

KEY PRODUCTS AND SERVICES

- An estimated 35% of Redshaw's 1982 revenue was derived from software products and 65% from turnkey systems. Turnkey sales are expected to account for over 95% of 1983 revenue.
- Redshaw's Comprehensive Insurance System is designed as a total agency management information turnkey system integrating file retrieval, accounting, and word processing functions. The system, with approximately 1,700 installations throughout the U.S. and Canada, runs on Wang 2200 T/LVP/SVP/MVP Series minicomputers.
- The system consists of over 150 programs addressing applications specific to the independent insurance agent, including the following:
 - Complete policy information, including daily accounting, claims, and follow-up.
 - All customer, company, and producer accounting.
 - Marketing support via profiling and prospecting.
 - Earned premium calculations.
 - Claims processing.
 - Printing of renewal request forms, invoices, letters, ACORD forms, and endorsement requests.
 - Premium tables for rate calculations and quotations.
 - Efficiency analysis by employee, producer, class, and company.
 - Detailed account histories.
 - Previous period comparisons.
 - New business, cancellation, renewal, and endorsement transaction registers and production summaries.
- Turnkey systems are priced from \$15,000 to over \$100,000, with an average cost of \$35,000.
 - The systems, all of which are upgradable to larger configurations, support from one to 48 CRT workstations and multiple printers.
 - Clients include agencies and companies of all sizes, processing up to 250,000 policies a year. The average customer processes approximately 10,000 policies per year.
- The Comprehensive Insurance System was enhanced in 1981 to include a new rating system, a system allowing independent agents to interface with large insurance firms, and an upgraded word processing system. Optional payroll and association membership systems are available.
- Hardware maintenance and installation are provided by over 150 Wang offices nationwide. Redshaw provides some hardware maintenance, on-site software installation, general consultation, and various support services.

- In Spring 1982 Hartford began interfacing its central mainframes with a Redshaw turnkey system installed at an independent property/casualty insurance agency. A new corporate unit, the Agency/Company Communication and Electronic Service System (ACCESS) was established by Hartford to develop this project for commercial availability.
 - The on-line system provides agencies with instant access to commercial quotes, speeding up the policy issuance process.
 - Telecommunications interfaces to the Redshaw system are also available from 18 additional insurance companies.
- Redshaw also provides system financing and ongoing education programs.

INDUSTRY MARKETS

- Redshaw derives 100% of its revenue from independent property and casualty insurance agents and companies.
 - The majority of customers have annual premium volumes of from \$500,000 to \$10 million.

GEOGRAPHIC MARKETS

- Approximately 85% of 1982 revenue was derived from the U.S. and 15% from Canada.
 - U.S. division offices are located in Atlanta, Burlington (MA), Portland, Los Angeles, and Bridgeville (PA). Offices are being opened in Chicago and Dallas.
 - Sales representatives are located in approximately 50 cities throughout the U.S.
 - Canadian sales are conducted by authorized distributors. Principal distributors are located in Montreal, Toronto, and Edmonton.

COMPUTER HARDWARE

- Nine Wang 2200 Series minicomputers are maintained at Redshaw's Pittsburgh headquarters.

COMPANY HIGHLIGHT

REDSHAW, INC.
103 Yost Boulevard
Pittsburgh, PA 15221
(412) 824-9226

Janet C. Thompson, President
Private Corporation
Total Employees: 80
Total Revenue, Fiscal Year End
10/31/80: \$3,000,000

PRINCIPAL BUSINESS Redshaw, Inc., incorporated in 1965, evolved from the automation of the Thompson Insurance Agency. In a marketing arrangement with Wang Laboratories, Redshaw provides the applications software and Wang provides the hardware for a turnkey system developed for property and casualty independent insurance agents.

SOURCE OF REVENUE

- 100% Software products.

PRODUCTS AND SERVICES

- Redshaw markets the Redshaw Comprehensive Insurance System, a software system designed as a total agency management information system integrating file retrieval, accounting and word processing functions. The system, with approximately 1,200 installations throughout the U.S. and Canada uses Wang 2200 T/VP/MVP Series minicomputers. Redshaw software is programmed in BASIC. Redshaw arranges for the purchase of minicomputers directly from Wang but does not purchase and resell them.
- The system consists of over 150 programs addressing applications specific to the independent insurance agent, including the following:
 - Complete policy information, including daily accounting, claims and follow up.
 - All customer, company and producer accounting.
 - Marketing support via profiling and prospecting.
 - Earned premium calculations.
 - Claims processing.
 - Printing of renewal request forms, invoices, letters, ACORD forms and endorsement requests.
 - Premium tables for rate calculations and quotations.
 - Efficiency analysis by employee, producer, class and company.
 - Detailed account histories.
 - Previous period comparisons.
 - New business, cancellation, renewal and endorsement transaction registers and production summaries.

REDSHAW, INC.

- Turnkey systems valued at \$20 million were installed in fiscal 1980, of which approximately \$17 million were Wang hardware revenues. Redshaw software packages license for an average of \$9,500 each. The systems, which may be upgraded to larger configurations, use from one to 39 CRT workstations and from one to four printers. Total system cost versus agency size is shown in the following chart:

<u>Number of Policies</u>	<u>Premium Volume</u>	<u>Total Purchase Price</u>
up to 4,000	\$300,000-1 million	\$21,000
4,000-8,000	\$1-2 million	\$26,000-29,000
8,000-20,000	\$2-4 million	\$31,000-38,000
8,000-20,000	\$4-8 million	\$41,000-51,000
20,000-50,000	\$8-20 million	\$69,000-80,000
50,000-250,000	\$20-80 million	\$82,000+

- Recent enhancements to the Comprehensive Insurance System include a new rating system, a system allowing independent agents to interface with large insurance firms and an upgraded word processing system.
 - An optional in-house payroll package is available for a purchase price of \$2,000.
 - Redshaw also markets an Insurance Association Package with membership, dues and benefits applications. Purchase price is in the \$5,000 to \$6,000 range.
- Hardware maintenance and installation is provided by over 120 Wang offices nationwide. Redshaw provides on-site software installation, general consultation and software support services.

INDUSTRY MARKETS

- 100% Independent insurance agents and companies.

GEOGRAPHIC MARKETS

- 80% U.S.
20% Canada.
- U.S. branch offices are located in Portland; Boston; Chicago; Atlanta; Indianapolis; Putnam, CT; and Bridgeville, PA.
- Canadian offices are located in Edmonton, Alberta; Richmond, British Columbia; Toronto and Ottawa, Ontario.

COMPUTER HARDWARE

- Four Wang 2200 Series minicomputers are maintained at Redshaw's Pittsburgh headquarters.
 - Approximately 10 Wang 2200s are installed at branch offices.

COMPANY BRIEF

Primary Industry-Specific Market: Retail Distribution

Reflectone Media Systems, Inc.

14460 Carlson Circle
Tampa, FL 33614
(813) 885-7481

CEO: John B. Mowell, Chairman
Subsidiary of: Reflectone, Inc.
Founded: 1985

Employees: 16 (10/86)
Revenue (FYE 3/31/86): \$800,000

The Company: Designs turnkey systems, featuring interactive video capability, for retail stores

Sources of Revenue:

- Turnkey systems (100%)

Key Products:

- Turnkey Systems
 - Interactive video-based retail system
 - Interactive video-based training system

Target Industry:

- Retail distribution
- Vocational and on-the-job training

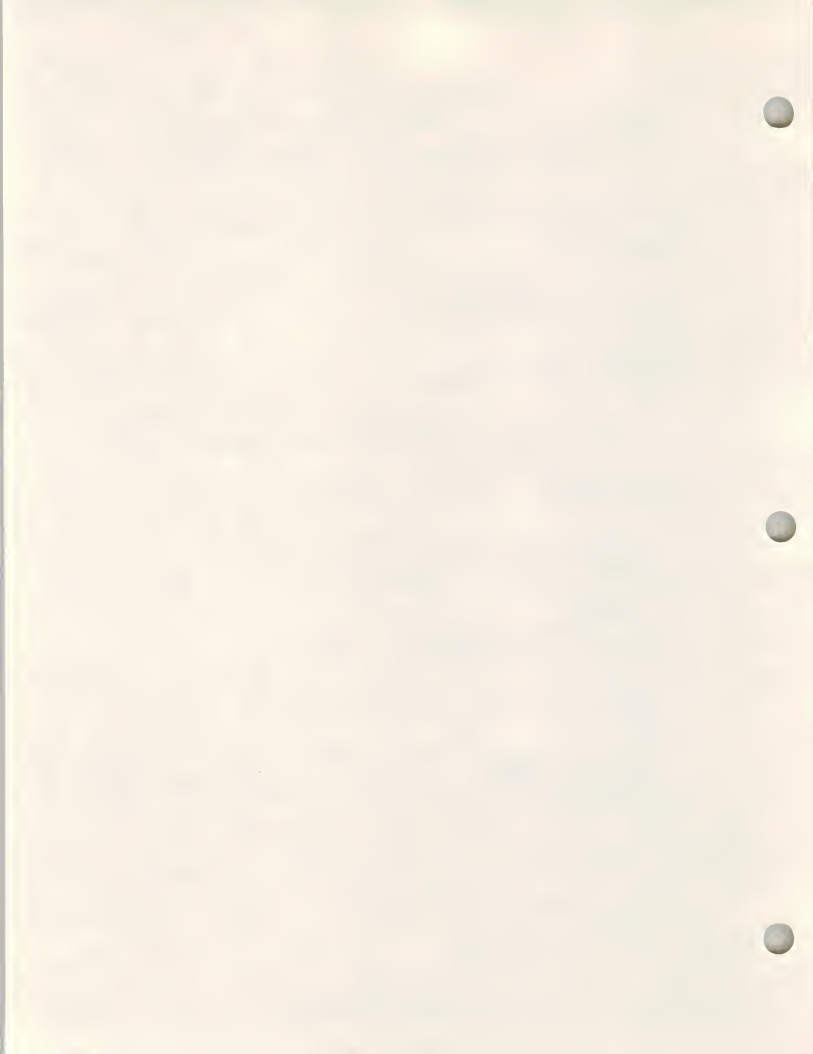
Geographic Markets:

- U.S. (100%)
- Sales Office: Tampa (FL)

Significant Events:

- Signed contract with Colorcraft Division (Fuqua Industries) for interactive system for retail photo processing
- Currently test marketing photo processing system through K-Mart in Tampa, Boston, Detroit, San Diego

October 1986



COMPANY PROFILE

REDINET SERVICES

14725 Detroit Avenue
Lakewood, OH 44107
(800) 321-2012

Dave Pond, Executive Manager
Division of Control Data Corporation
Total Employees: 25
Total Revenue, Fiscal Year End
12/31/87: \$2,000,000*

*INPUT estimate

The Company

Redinet Services, formed in 1984, is the group within Control Data Corporation that provides electronic data interchange (EDI) network services, translation and communications software products, and professional services.

As of June 1988, the group consisted of 25 non-dedicated employees.

INPUT estimates revenue for the group was approximately \$2 million for the fiscal year ending December 31, 1987.

Competitors for Redinet Services include: TranSettlement, EDI Solutions, and Metromark in the mainframe translation software market; SupplyTech, Birmingham Computer Group, and EDI Inc. in the microcomputer translation software market; and McDonnell Douglas, IBM, General Electric, Sterling, and Kleinschmidt in the network communications market.

Key Products and Services

Approximately 75% of Redinet Services' 1987 revenue was derived from EDI network services, 20% was derived from EDI translation and communication software, and the remaining 5% was derived from professional services.

REDI-EXCHANGE translates business documents from a company's in-house data format to the ANSI X12 standard format, and vice versa. REDI-EXCHANGE software runs under the MVS or MVS/XA operating systems and has two components: REDI-EXCHANGE Flat File and REDI-EXCHANGE Custom Converters.

- REDI-EXCHANGE Flat File software is universal to all REDI-EXCHANGE users. REDI-EXCHANGE Flat File translates X12 files received from trading partners into a standard flat file format. It also translates standard flat files into X12 files that can be sent to suppliers and customers.

- REDI-EXCHANGE Custom Converters are custom-coded programs that translate between a private format and a standard flat file. A Converter takes a file created by an in-house system and creates a standard flat file. It also converts incoming standard flat files into private formats.
- REDI-EXCHANGE handles all ANSI-approved X12 documents, including the following: invoice, remittance advice, material release, price sales catalog, request for quotation, response to request for quote, purchase order, ship notice/manifest, purchase order change request, receiving advice, purchase order change acknowledgment, and functional acknowledgment. REDI-EXCHANGE can be used together with CALL-LINK or REDI-LINK.
- CALL-LINK is the basic communications software tailored for use with REDINET. The software allows an IBM mainframe to emulate a 3780 for bisynchronous communications. CALL-LINK operates in the MVS and DOS environments.
- REDI-LINK, the company's premium mainframe communications software, is designed to connect to any remote system that can accept 2780/3780 bisynchronous connections. It is a sophisticated scheduling and tracking package developed especially for EDI. REDI-LINK software runs under the MVS or MVS/XA operating systems.

REDI-PRINT mainframe software is used to print standard X12 format business documents. REDI-PRINT is driven by tables, which can be modified. The system permits customization of printed documents and allows for expansion of tables to handle industry-specific documents. REDI-PRINT runs under the MVS or MVS/XA operating systems.

REDI-MICRO, the EDI microcomputer application, contains the following modules: Purchase Order & Purchase Order Acknowledgements, Material Releases & Shipping Notices, Invoices, Request for Quote & Response to Request for Quote, and Two Way Flat File Interface.

REDI-DOC is a microcomputer ANSI X12 document print program used to print out EDI transactions.

REDI-COMM is Redinet's microcomputer communications software. REDI-COMM features automatic operation,

checkpoint/restart, error detection and correction, and asynchronous or bisynchronous protocols.

REDI-SET-GO is educational software used to understand the ANSI X12 standards and the basic concepts of EDI.

The REDINET network allows users to trade with those currently using EDI as if they were also on the REDINET network. REDINET is currently interconnected with the following companies' networks: TranSettlement, McDonnell Douglas (EDI*NET), IBM (InfoNet), General Electric (EDI*EXPRESS), Sterling Software (ORDERNET), and Kleinschmidt. Control Data believes that providing this capability encourages the use of EDI and benefits the entire EDI industry.

Industry Markets

Redinet Services targets all industries with its EDI products and services. In the past, the company has successfully targeted the automotive industry. Now the company also targets discrete and process manufacturing segments, including apparel, textiles, and petroleum, as well as the industrial and retail distribution and health-care industries.

Geographic Markets

Redinet Services sells its EDI products and services throughout the U.S. and Canada. The company currently has limited coverage in Europe.

COMPANY PROFILE

RELATIONAL TECHNOLOGY, INC.

1080 Marina Village Parkway
Alameda, CA 94501
(415) 769-1400

Gary J. Morgenthaler, Chairman and CEO
Paul E. Newton, President
Public Corporation (Pending)
Total Employees: 668 (3/31/88)
Total Revenue, Fiscal Year End
6/30/87: \$46,565,000

The Company

Relational Technology, Inc., founded in 1980, develops, markets, and supports data base management and application development systems software products. The company's principal product is the INGRES distributed SQL relational data base management system.

Relational Technology's strategy is to address the need of large corporations, government agencies, and major universities for an integrated and distributed data management solution. The company intends to become a leading supplier by building on its strength in the DEC and UNIX markets.

In April 1988 Relational Technology issued a preliminary prospectus in anticipation of an initial public offering of 1.8 million shares of common stock. Of the shares to be offered, 1.5 million are to be sold by the company and the remaining shares are to be sold by certain stockholders. Net proceeds to the company will be used to repay bank debt and for working capital.

Fiscal 1987 revenue reached \$46.6 million, a 65% increase over fiscal 1986 revenue of \$28.1 million. Net income rose 49%, from \$1.7 million in fiscal 1986, to nearly \$2.5 million in fiscal 1987. A five-year financial summary follows:

**RELATIONAL TECHNOLOGY, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	6/87	6/86	6/85	6/84	6/83
Revenue	\$46,565	\$28,138	\$17,271	\$7,585	\$2,910
• Percent increase from previous year	65%	63%	128%	161%	N/A
Income before taxes	\$3,952	\$2,206	\$606	\$221	\$155
• Percent increase from previous year	79%	264%	174%	43%	N/A
Net income	\$2,477	\$1,664	\$555	\$198	\$140
• Percent increase from previous year	49%	200%	180%	41%	N/A
Earnings per share	\$0.30	\$0.23	\$0.08	\$0.03	\$0.03
• Percent increase from previous year	30%	188%	167%	—	N/A

Prior to fiscal 1987 the company typically priced its relational data base management system and application development tools as a single package. A portion of the revenue increase in fiscal 1987 resulted from price increases associated with the unbundling of these products.

- The company's product and customer base has grown during the past three years as the company has increased the types of computers and operating systems on which INGRES operates. However, licenses for use on DEC VAX computers have continued to represent a substantial portion of the license revenues in each of the past three fiscal years.
- Revenue from international customers continues to represent an increased percent of total revenue. International revenue was 35%, 31%, and 15% of total revenue for fiscal 1987, 1986, and 1985, respectively.
- Maintenance revenue has increased steadily, reflecting the growth of the company's customer base. Maintenance fees represented 12%, 10%, and 9% of total revenue for fiscal 1987, 1986, and 1985, respectively.
- Research and development expenditures were approximately \$10.4 million (22% of revenue) in fiscal 1987, \$9.2 million (33%

of revenue) in fiscal 1986, and \$5.9 million (34% of revenue) in fiscal 1985. During fiscal 1987 the company also capitalized about \$2.8 million in software development costs, reflecting the application of Statement of Financial Accounting Standards No. 86.

- The decrease in income as a percent of revenue in fiscal 1987 was primarily attributed to higher sales and marketing expenses associated with the expansion of the company's domestic and international sales and marketing organizations.
- Net income in fiscal 1987 was favorably impacted by foreign exchange gains of \$635,000, compared to nominal amounts in prior years.

Revenue for the six months ending December 31, 1987 reached \$34.9 million, a 103% increase over \$17.2 million for the same period in 1986. Net income for the period was \$2.5 million, compared to losses of \$218,000 for the same period the previous year.

- The revenue increase was attributed to the rapid expansion of the market for relational data base management systems, which was reflected in significant sales to new customers, particularly international customers, as well as continued sales to the existing customer base and increased maintenance revenue. International sales for the period represented 44% of total revenue.
- Pre-tax income in the first six months of fiscal 1988 includes \$1.3 million of foreign exchange gains.

As of March 31, 1988 Relational Technology had 668 employees (484 in the U.S. and Canada and 184 in Europe and Australia), segmented as follows:

Marketing and sales	377
Product development	203
Management, administration, and finance	<u>88</u>
	668

Relational Technology/INGRES competitors, by market area, include the following:

- DEC VAX/VMS market: Digital Equipment Corporation (Rdb), Oracle Systems Corporation (Oracle), and Sybase Corporation (DataServer).

- UNIX market: Informix Corporation (Informix), Oracle Systems (Oracle), Sybase (DataServer), and Unify Corporation (Unify).
- IBM mainframe market: IBM (DB2 and SQL/DS), Oracle Systems (Oracle), and, to a lesser degree, products from independent software vendors such as Cullinet Software (IDMS/R).
- Microcomputer market: Ashton-Tate (dBase II and III), Informix (Informix), and Oracle Systems (Oracle).

Key Products and Services

Approximately 88% of Relational Technology's fiscal 1987 revenue was derived from software product licenses and 12% from maintenance fees. A three-year source of revenue summary follows:

RELATIONAL TECHNOLOGY, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

ITEM	FISCAL YEAR					
	6/87		6/86		6/85	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$40.9	88%	\$25.3	90%	\$15.8	91%
Maintenance fees	5.7	12%	2.8	10%	1.5	9%
TOTAL	\$46.6	100%	\$28.1	100%	\$17.3	100%

Relational Technology's principal product is the INGRES relational data base management system.

- INGRES supports SQL and closely conforms to the SQL implementation of IBM's DB2 and SQL/DS products, as well as the SQL standards approved by the American Standards Institute and X/OPEN. INGRES also supports a proprietary version of QUEL, a command language used in engineering and scientific markets.
- INGRES Version 5.0 has been ported to a range of computers and operating systems, including the following:

- Mainframes: Amdahl 470, 58xx, VM/CMS, UTS; DEC VAX, VMS, ULTRIX, UNIX System V, 4.2/4.3 BSD; IBM and compatibles, VM/CMS, VM/IS, UNIX.
- Minicomputers: Alliant FX Series, Concentrix; AT&T 3B Series, UNIX System V; Arete 1200, 1600, ARIX 3.6; British Telecommunications M6000, Uniplus+ 5.2; CCI Power 6/32, UNIX System V; Convergent Megaframe II, UNIX System V; Data General MV Series, DG/UX 3.0; DEC VAX, VMS, ULTRIX, UNIX System V; Gould PowerNode Series, UTX/32; HP 9000/320, 9000/8xx, HP-UX; Honeywell XPS-100 Series, UNIX System V; IBM 9370, 43xx, VM/CMS, VM/IS, UNIX; ICL CLAN Series, UNIX System V; NCR Tower 32, UNIX System V; Pyramid 90x, 98x, 98xx, OSx, Sequent Balance 8000, 21000, UNIX System V, 4.2 BSD, Unisys 7000, 5000/50, 5000/70, 5000/80, 5000/90, UNIX System V, 4.2 BSD.
- Workstations and Microcomputers: AT&T PC6300, MS-DOS; Apollo DN Series, Domain/IX; Compaq Plus, AT, MS-DOS; DEC MicroVAX, VAXstation, VAXmate, MicroVMS, MicroULTRA, MS-DOS; HP 150, MS-DOS; IBM and compatibles, PC/XT, PC/AT, PS/2, PC-DOS, MS-DOS; IBM RT PC, AIX 2.1; ICL DRS300, C-DOS; Sun 2 and 3 Series, 4.2 BSD.
- The company began initial shipments of a new version of INGRES for DEC VAX/VMS systems.
- There are over 7,000 end-users of minicomputer and mainframe-based INGRES products.
- License fees for INGRES range from \$950 to \$3,000 for microcomputers and single user workstations, and from \$5,000 to \$160,000 for minicomputers and mainframes.

INGRES application development and end user tools include the following:

- INGRES/Forms allows the user to define, create, and edit forms interactively to be used by applications, with specifications for validation checks, ranges, and relative field values of data during entry.
- INGRES/Reports allows the user to lay out the format of a report visually on the screen as it would be seen on the printed page.

- INGRES/Graphics allows data to be displayed visually with many graph types, including bar charts, pie charts, multi-line plots, and scatter plots (currently available for DEC VAX and certain UNIX environments).
- INGRES/4GL is an applications development system for developing applications rapidly without conventional coding.
- INGRES/Embedded Languages allow a user programming in a conventional language to make SQL commands within the regular program.
- INGRES/Menu is an interactive menu.
- INGRES/Query allows users to express queries and perform transactions by filling in the blanks on a form.
- INGRES/PC LINK allows corporate microcomputer users to review the contents of INGRES data bases on certain larger computers, extract desired data, transfer the data across a network, and store the data in the users' microcomputer files.

Relational Technology's distributed data base management products include the following:

- INGRES/NET, introduced in 1984, allows the user to use the INGRES application development and end user tools on his local computer while accessing data from an INGRES data base on a remote computer. INGRES/NET is designed to be independent of the underlying communications hardware and networking software and has been implemented on various industry standard networking protocols, including DECNET (Ethernet), TCP/IP, and SNA.
- INGRES/STAR, introduced in 1986, allows the user to access and use the data from INGRES data bases on multiple remote computers simultaneously, as if all the data were on the user's local computer.
 - INGRES/STAR Release 5.0 accommodates query from multiple remote data bases simultaneously, but currently offers only limited update capability. Relational Technology intends in future releases to accommodate updates of information contained on multiple computers without specifying the location of that information.
 - INGRES/STAR is currently available for networks of DEC VAX computers running the VMS operating system and the

company has announced plans to make the product available on IBM mainframe and microcomputers. The company is developing extensions of INGRES/STAR to run on other operating systems and to add parallel processing and fault tolerance. Relational Technology has also entered into agreements to develop data base gateways to interconnect data bases using IBM's DB2, SQL/DA, and IMS products.

- Although revenue from sales of INGRES/STAR have not been significant to date, the company believes that the availability of this product is an important competitive factor in its sales of other INGRES products.

Relational Technology provides support and update packages for its software products as follows:

- A support package consists of technical support, including telephone consultation on the use of the products and problem resolution, and system updates for software products and user documentation.
- An update package consists of system updates only.
- A typical fee for an annual support or update package is approximately 15% and 7 1/2%, respectively, of the current initial license fee for the application license at the time of the renewal.

Relational Technology has jointly funded product development efforts with several companies, including General Motors Research, Hewlett-Packard, J.P. Morgan & Company, Lotus Development Corporation, Novell, Inc., Sun Microsystems, Pansophic Systems, and Boeing.

Industry Markets

The INGRES product line is targeted at Fortune 1000 companies and other large organizations in the manufacturing, finance, telecommunications, government, and education sectors.

- Manufacturing/industrial clients include The Boeing Company, Celanese Corporation, Chevron Corporation, Ford Motor Company, General Electric, General Dynamics, Honeywell, Lockheed, Martin Marietta, Polaroid Corporation, Upjohn Company, and Westinghouse Electric Corporation.
- Finance clients include Citicorp, J.P. Morgan & Co., Lloyds Bank, London Stock Exchange, and Midland Bank.

- Telecommunications clients include Alcatel, AT&T, Bell Canada, Bell South Corporation, Northwestern Bell, and U.S. West.
- Government clients include Agriculture Canada, Deutsche Bundespost, Jet Propulsion Laboratory, Lawrence Livermore Laboratory, NASA, U.K. National Health Service, U.K. Navy, and the U.S. Air Force, Army, Navy, and Departments of Defense and Interior.
- Education clients include Boston University, Carnegie Mellon University, Johns Hopkins University, Princeton, University of California (Berkeley), University of Michigan, and University of Wisconsin.

International Computers Limited accounted for 8% of Relational Technology's fiscal 1987 revenue.

Geographic Markets

Approximately 65% of Relational Technology's fiscal 1987 revenue was derived from the U.S. and 35% from international sources (including export sales).

A three-year summary of geographic source of revenue follows:

**RELATIONAL TECHNOLOGY, INC.
THREE-YEAR GEOGRAPHIC SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	6/87		6/86		6/85	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S. (a)	\$34.1	73%	\$22.9	82%	\$16.4	95%
Europe	10.6	23%	4.2	15%	0.5	3%
Other	1.9	4%	1.0	3%	0.4	2%
TOTAL	\$46.6	100%	\$28.1	100%	\$17.3	100%

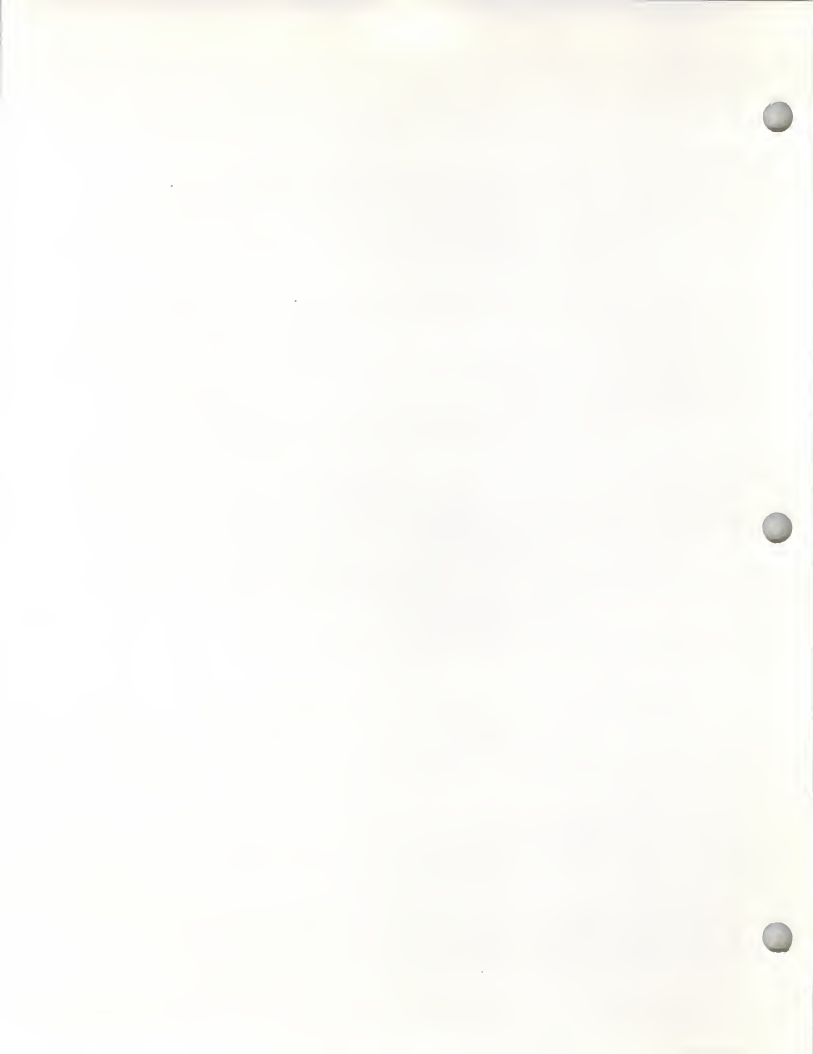
(a) Includes export sales of approximately \$3.7 million, \$3.6 million, and \$1.7 million for fiscal 1987, 1986, and 1985, respectively.

Relational Technology markets its products in the U.S. and Canada primarily through its domestic direct sales and support force.

- Products are sold and supported from the company's headquarters in Alameda and from field offices located in the metropolitan areas of Atlanta, Boston, Chicago, Cleveland, Dallas, Denver, Detroit, Houston, Los Angeles, Minneapolis, Montreal, New York, Ottawa, San Francisco, Seattle, Toronto, and Washington, D.C.

Relational Technology markets its products outside the U.S. and Canada primarily through five wholly owned subsidiaries that sell and support the company's products in Australia, Austria, Belgium, Denmark, Finland, France, Indonesia, Ireland, Japan, Luxembourg, the Middle East, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, the U.K., and West Germany. The company also markets its products in certain foreign countries through international distributors.

Relational Technology has OEM agreements with British Telecommunications PLC, Data General, ELXSI, Gould, Honeywell Bull, International Computers Limited, Matra System, MIPS Computer Systems, Pyramid Technology, Sequent Computer Systems, Unisys, among others. The company has also enter into OEM agreements under which DEC markets INGRES for use on VAX/ULTRIX systems and IBM markets INGRES for use on its RT PC workstation and PS/2 microcomputers running the AIX operating system.



COMPANY BRIEF

Cross Industry: Systems Software

Relational Technology, Inc.
1080 Marino Village Parkway
Alameda, CA 94501
(415) 769-1400

CEO: Gary Morgenthaler, President
Private Company
Founded: 1980

Employees: 325 (11/86), 300 (6/86)
Revenue (FYE 6/30/86): \$28,100,000

The Company: Relational Technology, Inc. provides a relational data base management system for IBM, DEC, and UNIX-based systems

Source of Revenue:

- Systems Software (100%)

Key Products and Services:

- Systems Software (Utilizes IBM, DEC, Amdahl, Elxsi, Pyramid, CCI, Sperry, Gould, AT&T, Sun, Apollo, and Hewlett-Packard microcomputers, minicomputers, and mainframe computers running under MS-DOS, MVS, VM/CMS, VAX/VMS, and UNIX operating system)
 - INGRES is a distributed SQL relational data base management system. INGRES provides integrated application tools including a fourth generation language application development environment and end-user decision support tools.

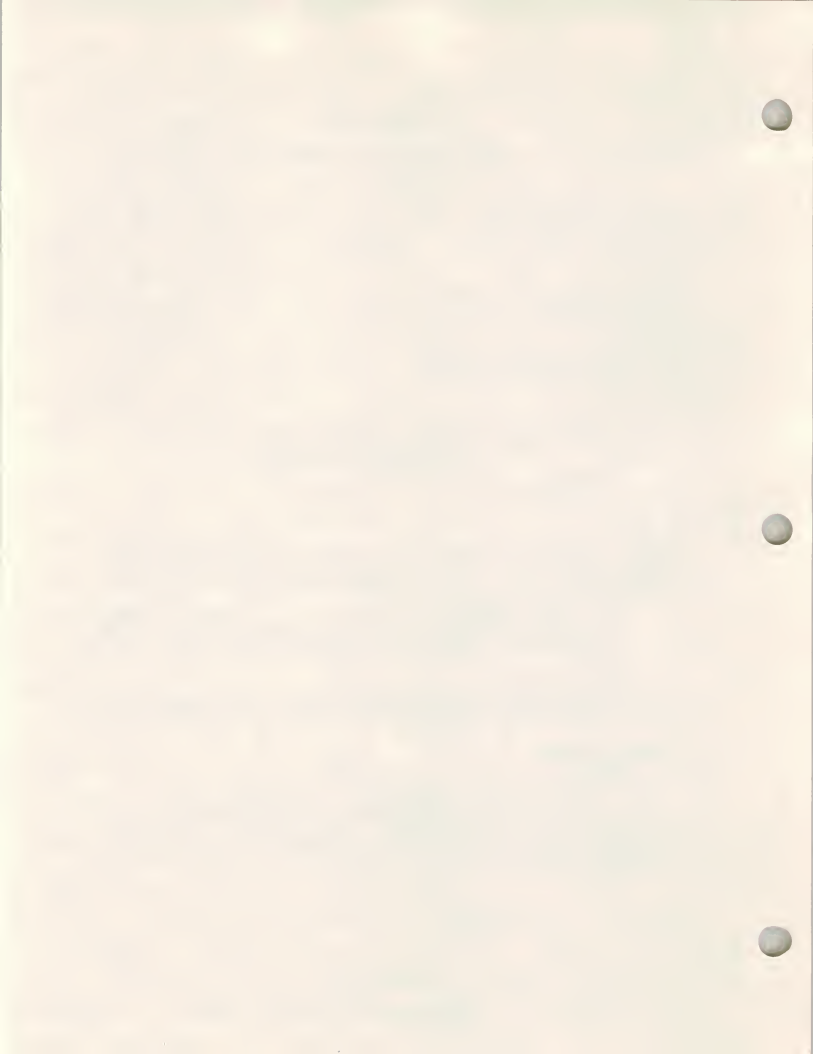
Target Industries:

- Cross industry, including banking and finance, government, education, manufacturing, CAD/CAM, and engineering

Geographic Markets:

- U.S. (75%)
- Non-U.S. (25%)
- Direct sales from 13 U.S. sales offices, international headquarters in London, and international sales offices in Paris, Berlin, Amsterdam, and Sydney
- In addition, approximately 20% of sales are through VARs, OEMs, and joint marketing agreements, as well as foreign distributors in Scandinavia, Belgium, Italy, and Hong Kong

November 1986



COMPANY HIGHLIGHT

RELATIONAL TECHNOLOGY INC.
2855 Telegraph Avenue
Berkeley, CA 94705
(415) 845-1700

Gary Morgenthaller, President
Private Corporation
Total Employees: 67
Total Revenue, Fiscal Year End
6/30/83: \$3,025,000

THE COMPANY

- Relational Technology Inc. (RTI), founded in 1980, develops and markets relational data base management systems software and related utility packages.
- Fiscal 1983 revenue reached \$3 million, a 293% increase over fiscal 1982 revenue of \$878 thousand. A two-year revenue summary follows:

RELATIONAL TECHNOLOGY INC.
TWO-YEAR REVENUE SUMMARY
(\$ thousands)

ITEM	FISCAL YEAR	
	6/83	6/82
Revenue	\$ 3,025	\$ 878
• Percent increase from previous year	293%	N/A
Net income	\$ 244	\$ 49
• Percent increase (decrease) from previous year	397%	N/A

- As of June 1983 RTI had 67 employees. There are currently 101 employees distributed as follows:

Marketing/sales	30
Software services/customer support	13
Computer operations	35
General and administrative	<u>23</u>
	101

- RTI's major competitors include Oracle Corporation, DEC, Cincom Systems, and Software AG.

KEY PRODUCTS AND SERVICES

- Ninety-five percent of RTI's fiscal 1983 revenue was derived from license and renewal fees of RTI's relational data base management systems software packages. The remaining 5% of revenue was derived from training and consulting services.
- RTI's primary software product was originally developed by computer scientists at U.C. Berkeley in the early 1970s. The founders of RTI acquired the commercial licensing rights in 1980 and developed an enhanced commercial version called INGRES.
- INGRES, a fully integrated relational data base (RDBMS) management system and application development tool, combines an English-like query language with forms-based visual programming tools that allow end users to create, control, and view large and complex data bases without programmer assistance. Features include:
 - A comprehensive set of generic applications tools for terminal control, report generation, graphics, interactive query updates, and application development. Each application tool can be used alone or combined with customized integrated production applications.
 - The application tools are available to users when their data base is defined. Once defined, users can combine tables and select rows and columns using simple commands, thus creating updated or new data base relations.
 - An integrated data dictionary, also a relational data base, stores information about the data bases, applications, storage, integrity control, and catalogs of forms, graphs, and reports. The data dictionary is automatically updated whenever changes to any portion of the data base are made.
 - A structured English-like query language, QUEL allows users to specify what they want done. Using a single command, data from several tables can be joined together and multiple rows can be selected for updates or retrieval.
 - Commonly used command patterns can be stored and executed automatically so that the details of processing QUEL are invisible to the user.
 - QUEL also offers data definitions and protection through English-like syntax.
 - Visual programming, which is based on the concept of a "forms application," uses a video display version of printed business forms as the interactive interface to user applications. Each form represents a set of related data fields for display or entry and contains a command

menu for selecting a task. The user can thus control the underlying actions of the application by entering data into the form and selecting one of the commands from the menu.

- Additional features to INGRES include:
 - . Concurrency/transaction processing.
 - . Failure recovery.
 - . Multiple data types.
- Users can also sequence between forms or use any of INGRES's productivity tools including:
 - INGRES/FORMS^{T.M.} lets users interactively define, create, and edit forms to be used by applications with specification for validation checks and ranges and relative field values of data during entry.
 - INGRES/REPORTS^{T.M.} allows users to lay out visually formats of given reports on the screen as they would be seen on the printed page.
 - INGRES/QUERY^{T.M.} is a Visual Programming interface to QUEL's query-update service. Users can make queries and perform transactions by filling in fields on a form. Entered values act as search criteria for retrieving or updating the data base.
 - INGRES/APPLICATIONS-BY-FORMS^{T.M.} allows end users to define new applications by integrating the INGRES tools with custom designed forms and programs. All functions of an application can be created including data entry, manipulation, graphics, and report generation. Users can develop their applications one step at a time resulting in new applications that are developed through prototyping enabling developers to be more creative.
- INGRES/GRAPH.CS^{T.M.}, an optional productivity tool, displays data visually with many graphic representations including bar and pie charts, multi-line plots, and scatter plots.
- INGRES/NET^{T.M.} gives INGRES users distributed access to all data bases in a computer network connected by DECNET. All INGRES tools and applications run interactively on the users local computers with INGRES/NET, while INGRES, which acts as a data base manager, controls the processing of data at a remote location. The tools and RDBMS communicate via messages across the network. Features include:
 - Improved speed of interactive applications and overall throughput.
 - Reduced size and number of messages, thus lowering the cost of sending information over long-distance telephone lines.

RELATIONAL TECHNOLOGY INC.

- Simultaneous access by multiple users of different functions and the linking of multiple computers running INGRES that are interconnected to run larger applications.
- The INGRES product line, which runs on the DEC VAX 11/XX series under VMS or UNIX, has recently been developed to run on microcomputers. RTI's new product, MicroINGRESTM, introduced in 1983, will run on any 6800 micro-based system under UNIX. Licensing information of all INGRES products is provided in the exhibit.
- Over 30% of RTI's technical staff is dedicated to support of the INGRES product line. RTI's customer support services consist of:
 - A 24-hour, 7 day-a-week hotline service.
 - Unlimited telephone consulting.
 - Customized training.
 - Documentation.

INDUSTRY MARKETS

- RTI derived its fiscal 1983 revenue from the following industry sectors:

Discrete Manufacturing	27%
Process Manufacturing	11
Education	15
Federal Government	21
Research	13
Other	<u>13</u>
	100%

- INGRES is currently being used by more than 150 customers. Clients include Boeing, DEC, Jet Propulsion Labs, Raychem, Schlumberger, and TRW.

GEOGRAPHIC MARKETS

- Ninety-five percent of RTI's fiscal 1983 revenue was generated from the U.S. The remaining 5% came from international markets.
- U.S. sales/branch offices are located in Atlanta, Boston, Chicago, Los Angeles, New York, San Francisco, and Washington, D.C.
- RTI currently has nine U.S. OEMs including NCR, Sun Micro Systems Inc., Computer Consoles, Sequoia, InDaSys, Callan Data Systems, and Codata Systems Corporation.

RELATIONAL TECHNOLOGY INC.

EXHIBIT

RELATIONAL TECHNOLOGY INC.

PRODUCT	DESCRIPTION	PRICE	NUMBER INSTALLED	CPU REQUIREMENTS (Operating System)
INGRES ^{T.M.}	Relational Data Base Management System. (RDMS)	\$40,000 \$20,000	404	DEC VAX 11/780 and 11/750, (VMS and UNIX) DEC VAX 11/730, 11/725 (VMS and UNIX)
INGRES/Graphics ^{T.M.}	Graphics display tool	\$ 2,500	118	DEC VAX 11/XX Series (VMS and UNIX)
INGRES/NET ^{T.M.}	Distributed Access for Local Area and Global Networks	\$ 5,000 (per network mode)	7 Networks	DEC VAX 11/XX, Sun II (VMS and UNIX)
Micro/INGRES ^{T.M.}	Micro Computer based RDMS. (Retail Price)	\$ 2,000- \$ 5,000	N/A	Codata 3300 (UNIX) Dual System 83/20 (UNIX) NCR Tower 1632 (UNIX) Sun II (UNIX)

- Foreign distributors include Mesarteam S.R.L. in Italy and Inenco A/S Information Engineering Company in Norway. By mid-1984 INGRES will be sold and serviced directly in the U.K., France, Germany, and The Netherlands as well.

COMPUTER HARDWARE AND SOFTWARE

- RTI maintains 5 DEC VAX-11/750s running under VMS and UNIX at its Berkeley headquarters.

FINANCIAL UPDATE TO HIGHLIGHT DATED OCTOBER 1983

HALE SYSTEMS, INC.
(Formerly Remote Computing)
1076 East Meadow Circle
Palo Alto, CA 94303
(415) 494-6111

Charles G. Calderaro, CEO
Total Employees: 119
Total Revenue, Fiscal Year End
3/31/84: \$27,798,000
Computer Services Revenue:
\$10,182,000

- Hale Systems, Inc. (HSI) is comprised of the Remote Computing division and Datron, a company that designs communications systems for military and government use. The company announced in September 1984 its intention to separate Datron from HSI by offering securities of Datron to the public and distributing the remaining shares of Datron common stock as a dividend to HSI shareholders. After this occurs, the Remote Computing name will be dropped and the company will heretofore be known as Hale Systems, Inc.
- A four-year financial summary follows:

HALE SYSTEMS, INC. REMOTE COMPUTING DIVISION FOUR-YEAR FINANCIAL SUMMARY (\$ thousands)

ITEM \ FISCAL YEAR	3/84	3/83	3/82	3/81
Revenue	\$ 10,182	\$ 8,486	\$ 7,285	\$ 12,209
• Percent increase (decrease) from previous year	20%	16%	(40%)	4%
Income (loss) before taxes	\$ 724	\$ 712	\$ (271)	\$ 287
• Percent increase (decrease) from previous year	2%	363%	(194%)	(72%)
Net income (loss)	\$ 452	\$ 664	\$ (271)	\$ 287
• Percent increase (decrease) from previous year	(32%)	345%	(194%)	(67%)

SOURCE OF REVENUE

- Remote Computing's fiscal 1984 revenue was derived as follows:

	<u>Revenue</u> <u>(\$ thousands)</u>	<u>Percent</u> <u>of Total</u>
Processing services	\$ 9,141	90%
Software products	200	2
Professional services	189	2
Integrated systems	<u>652</u>	<u>6</u>
	\$ 10,182	100%

- Financial applications contributed 73% of Remote Computing's fiscal 1984 processing revenue. The remaining 27% was derived from utility processing, statistical analysis, and other general timesharing applications.

COMPANY PROFILE

RELATIONAL TECHNOLOGY, INC.

1080 Marina Village Parkway
Alameda, CA 94501
(415) 769-1400

Gary J. Morgenthauer, Chairman
Paul E. Newton, President and CEO
Public Corporation (Pending)
Total Employees: 820 (8/88)
Total Revenue, Fiscal Year End
6/30/88: \$87,386,000

The Company

Relational Technology, Inc., founded in 1980, develops, markets, and supports data base management and application development systems software products. The company's principal product is the INGRES distributed SQL relational data base management system.

Relational Technology's strategy is to address the need of large corporations, government agencies, and major universities for an integrated and distributed data management solution. The company intends to become a leading supplier by building on its strength in the DEC and UNIX markets.

In May 1988 Relational Technology completed an initial public offering of 1.8 million shares of common stock. Of the shares offered, 1.5 million were sold by the company and the remaining shares were sold by certain stockholders. A portion of the \$22.6 million in net proceeds to the company was used to repay bank debt. The remainder will be used for working capital.

Fiscal 1988 revenue reached \$87.4 million, an 88% increase over fiscal 1987 revenue of \$46.6 million. Net income rose 201%, from \$2.5 million in fiscal 1987, to nearly \$7.5 million in fiscal 1988. A five-year financial summary follows:

**RELATIONAL TECHNOLOGY, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	6/88	6/87	6/86	6/85	6/84
Revenue	\$87,386	\$46,565	\$28,138	\$17,271	\$7,585
• Percent Increase from previous year	88%	65%	63%	128%	161%
Income before taxes	\$12,364	\$3,952	\$2,206	\$606	\$221
• Percent Increase from previous year	213%	79%	264%	174%	43%
Net income	\$7,464	\$2,477	\$1,664	\$555	\$198
• Percent increase from previous year	201%	49%	200%	180%	41%
Earnings per share	\$0.76	\$0.29	\$0.23	\$0.08	\$0.03
• Percent increase from previous year	162%	26%	188%	167%	--

Prior to fiscal 1987, the company typically priced its relational data base management system and application development tools as a single package. A portion of the revenue increase in fiscal 1987 resulted from price increases associated with the unbundling of these products.

- The company's product and customer base has grown during the past three years as the company has increased the types of computers and operating systems on which INGRES operates. However, licenses for use on DEC VAX computers have continued to represent a substantial portion of the license revenues in each of the past three fiscal years.
- Revenue from international customers continues to represent an increased percent of total revenue. International revenue was 44%, 35%, and 31% of total revenue for fiscal 1988, 1987, and 1986, respectively.
- Maintenance revenue has increased steadily, reflecting the growth of the company's customer base. Maintenance fees represented 16%, 12%, and 10% of total revenue for fiscal 1988, 1987, and 1986, respectively.
- Research and development expenditures were approximately \$14.7 million (17% of revenue) in fiscal 1988, \$10.4 million

(22% of revenue) in fiscal 1987, and \$9.2 million (33% of revenue) in fiscal 1986. The company also capitalized about \$3.9 million and \$2.8 million during fiscal 1988 and 1987, respectively, in software development costs, reflecting the application of Statement of Financial Accounting Standards No. 86.

- Net income was favorably impacted by foreign exchange gains of \$842,000 in fiscal 1988 and \$635,000 in fiscal 1987 and net interest income of \$672,000 in fiscal 1988 and \$215,000 in fiscal 1987.

Revenue for the six months ending December 31, 1988 reached \$55.7 million, a 60% increase over \$34.9 million for the same period in 1987. Net income for the period was \$3.7 million, a 48% increase over \$2.5 million for the same period a year ago.

As of August 31, 1988, Relational Technology had 820 employees (589 in the U.S. and Canada and 231 in Europe and Australia), segmented as follows:

Marketing and sales	469
Product development	243
Management, administration, and finance	<u>108</u>
	820

Relational Technology/INGRES competitors, by market area, include the following:

- DEC VAX/VMS market: Digital Equipment Corporation (Rdb), Oracle Systems Corporation (Oracle), and Sybase Corporation (DataServer).
- UNIX market: Informix Corporation (Informix), Oracle Systems (Oracle), Sybase (DataServer), and Unify Corporation (Unify).
- IBM mainframe market: IBM (DB2 and SQL/DS), Oracle Systems (Oracle), and, to a lesser degree, products from independent software vendors such as Cullinet Software (IDMS/R).
- Microcomputer market: Ashton-Tate (dBase II and III), Informix (Informix), and Oracle Systems (Oracle).

Key Products and Services

Approximately 84% of Relational Technology's fiscal 1988 revenue was derived from software product licenses and 16% from maintenance fees. A three-year source of revenue summary follows:

RELATIONAL TECHNOLOGY, INC. THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR					
	6/88		6/87		6/86	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$73.2	84%	\$40.9	88%	\$25.3	90%
Maintenance fees	14.2	16%	5.7	12%	2.8	10%
TOTAL	\$87.4	100%	\$46.6	100%	\$28.1	100%

Relational Technology's principal product is the INGRES relational data base management system.

- INGRES supports SQL and closely conforms to the SQL implementation of IBM's DB2 and SQL/DS products, as well as the SQL standards approved by the American National Standards Institute and X/OPEN. INGRES also supports a proprietary version of QUEL, a command language used in engineering and scientific markets.
- INGRES Version 5.0 has been ported to a range of computers and operating systems, including the following:
 - Mainframes: Amdahl 470, 58XX, VM/CMS, UTS; DEC VAX, VMS, ULTRIX, UNIX System V, 4.2/4.3 BSD; IBM and compatibles, VM/CMS, VM/IS, UNIX.
 - Minicomputers: AT&T 3B Series, UNIX System V; Aris 1200, 1600, ARIS 3.6; British Telecommunications M6000, Uniplex+ 5.2; CCI Power 6/32, UNIX System V; Convergent Megaframe II, UNIX System V; Data General MV Series, DG/UX 3.0; DEC VAX, VMS, ULTRIX, UNIX System V, 4.2 BSD; Gould PowerNode Series, UTX/32; HP 9000/3XX, 9000/8XX, HP-UX; Honeywell XPS-100 Series, UNIX System V; IBM 9370, 43XX, VM/CMS, VM/IS, UNIX; ICL CLAN Series, UNIX System V; NCR Tower 32,

UNIX System V; Pyramid 90X, 98X, 98XX, OSx, Sequent Balance 8000, 21000, Symmetry Series, UNIX System V, 4.2 BSD, Dynix; Unisys 7000, 5000/50, 5000/70, 5000/80, 5000/90, UNIX System V, 4.2 BSD.

- Workstations and Microcomputers: AT&T PC6300, 6386, MS-DOS 2.0, UNIX; Apollo DN Series, Domain/IX; Compaq Plus, AT, MS-DOS, UNIX; DEC MicroVAX, VAXstation, VAXmate, MicroVMS, MicroULTRIX, MS-DOS; HP 150, MS-DOS; IBM and compatibles, PC/XT, PC/AT, PS/2, PC-DOS, MS-DOS, XENIX 2.0; IBM RT PC, AIX 2.1; ICL DRS300, C-DOS; Sun 2, 3, and 4 Series, 386i, UNIX.
- In March 1988 Relational Technology began shipments of INGRES Release 6 for DEC VAX/VMS systems. The multiserver architecture of this release is designed to take advantage of new high-speed multiprocessor computers recently released by DEC, Sequent Computer Systems, and other computer manufacturers.
- In January 1989, Relational Technology announced the availability of INGRES, end-user and application development tools on DEC's new high-performance VAXstation 3100 and DECstation 3100 Desktop Systems.
- There are over 7,000 end users of minicomputer- and mainframe-based INGRES products.
- License fees for INGRES range from \$950 to \$3,000 for microcomputers and single-user workstations, and from \$5,000 to \$160,000 for minicomputers and mainframes.

INGRES application development tools include the following:

- INGRES/Forms allows the user to interactively define, create, and edit forms to be used by applications, with specifications for validation checks, ranges, and relative field values of data during entry.
- INGRES/Reports allows the user to lay out the format of a report visually on the screen as it would be seen on the printed page.
- INGRES/Graphics allows data to be displayed visually with many graph types, including bar charts, pie charts, multiline plots, and scatter plots (currently available for DEC VAX and certain UNIX environments).

- INGRES/4GL is an applications development system for developing applications rapidly without conventional coding.
- INGRES/Embedded Languages allow a user programming in a conventional language to make SQL commands within the regular program.

INGRES end-user tools include the following:

- INGRES/Menu is an interactive menu.
- INGRES/Query allows users to express queries and perform transactions by filling in the blanks on a form.
- INGRES/PC LINK allows corporate microcomputer users to review the contents of INGRES data bases on certain larger computers, extract desired data, transfer the data across a network, and store the data in the users' microcomputer files.

Relational Technology's distributed data base management products include the following:

- INGRES/NET, introduced in 1984, allows the user to use the INGRES application development and end-user tools on his local computer while accessing data from an INGRES data base on a remote computer. INGRES/NET is designed to be independent of the underlying communications hardware and networking software and has been implemented on various industry standard networking protocols, including DECNET (Ethernet), TCP/IP, and SNA.
- INGRES/STAR, introduced in 1986, allows the user to access and use the data from INGRES data bases on multiple remote computers simultaneously, as if all the data were on the user's local computer.
 - INGRES/STAR Release 5.0 accommodates queries from multiple remote data bases simultaneously, but currently offers only limited update capability. Relational Technology intends in future releases to accommodate updates of information contained on multiple computers without having to specify the location of that information.
 - INGRES/STAR is currently available for networks of DEC VAX computers running the VMS operating system. Relational Technology has announced plans to make the product available on IBM mainframes and microcomputers. The company is developing extensions of INGRES/STAR to

run on other operating systems and to add parallel processing and fault tolerance. Relational Technology has also entered into agreements to develop data base gateways to interconnect data bases using IBM's DB2, SQL/DS, and IMS products.

- Although revenues from sales of INGRES/STAR have not been significant to date, the company believes that the availability of this product is an important competitive factor in its sales of other INGRES products.
- INGRES Gateways, introduced in 1988, allow customers to integrate INGRES applications into old existing nonrelational software, providing easy access to existing data bases and file systems.
 - The INGRES Gateway to DEC RMS allows users to access data from RMS files for use in INGRES applications.
 - The INGRES Gateway to Ashton-Tate's dBASE III allows users to access data from dBASE III.
 - In the future INGRES Gateway products will be introduced for other products, including IBM's IMS and DB2 and DEC's Rdb data base system.

Relational Technology provides support and update packages for its software products as follows:

- A support package consists of technical support, including telephone consultation on the use of the products and problem resolution, and system updates for software products and user documentation.
- An update package consists of system updates only.
- A typical fee for an annual support or update package is approximately 15% and 7 1/2%, respectively, of the current initial license fee for the application license at the time of the renewal.

Relational Technology has jointly funded product development efforts with several companies, including General Motors Research, Hewlett-Packard, J.P. Morgan & Company, Lotus Development Corporation, Novell, Inc., Sun Microsystems, Pansophic Systems, and Boeing.

- During fiscal 1988, Relational Technology signed agreements with Sun Microsystems (for the development of a new set of mouse- and window-based SQL tools) and Cadre Technologies (to develop a set of computer-aided software engineering tools for use with INGRES).

Industry Markets

The INGRES product line is targeted at Fortune 1000 companies and other large organizations in the manufacturing, finance, telecommunications, government, and education sectors.

- Manufacturing/industrial clients include The Boeing Company, Celanese Corporation, Ford Motor Company, General Dynamics, General Electric, Honeywell, Lockheed, Martin Marietta, Polaroid Corporation, Upjohn Company, and Westinghouse Electric Corporation.
- Finance clients include Citicorp, J.P. Morgan & Co., Lloyds Bank, London Stock Exchange, and Midland Bank.
- Telecommunications clients include Alcatel, AT&T, Bell Canada, Bell South Services, British Telecommunications, Northwestern Bell, Southwestern Bell, and U.S. West.
- Government clients include Agriculture Canada, Deutsche Bundespost, Jet Propulsion Laboratory, Lawrence Livermore Laboratory, NASA, U.K. National Health Service, U.K. Navy, and the U.S. Air Force, Army, Navy, Postal Services, and Departments of Defense and Interior.
- Education clients include Boston University, Carnegie Mellon University, Johns Hopkins University, London School of Economics, Massachusetts Institute of Technology, Princeton, University of California (Berkeley), University of Colorado, University of Michigan, and University of Wisconsin.

Relational Technology has OEM agreements with Apollo Computer, British Telecommunications PLC, Concurrent Computer Corporation, Data General, DEC, ELXSI, Gould, Honeywell Bull, IBM (for use on its RT PC workstation and PS/2 microcomputers running the AIX operating system), International Computers Limited, Matra System, MIPS Computer Systems, Motorola Computer Systems Division, Pyramid Technology, Sequent Computer Systems, Synthesis Software Solutions, and Unisys.

Relational Technology has also licensed a number of VARs to distribute INGRES in connection with their own application software packages, including Automatic Data Processing (Network Services Division), General Electric, Hughes Network Systems, and Intergraph.

- The company placed increasing importance on sales through VARs during fiscal 1988 as it introduced its INGRES Partners program. This program provides marketing, sales, and specialized technical support to assist these VARs in developing, maintaining, and marketing INGRES.
- In December 1988, Relational Technology and Information Associates (a wholly owned subsidiary of Management Science America) announced a three-year partnership agreement that allows Information Associates to distribute all of Relational Technology's INGRES products to administrative customers in higher education.

Geographic Markets

During fiscal 1988, Relational Technology continued its expansion of its domestic and international sales, support, and marketing forces. The company significantly expanded its domestic and international sales and support capability from 237 employees in fiscal 1987 to 429 employees as of August 31, 1988.

Approximately 56% of Relational Technology's fiscal 1988 revenue was derived from the U.S. and 44% from international sources (including export sales).

A three-year summary of geographic source of revenue follows:

RELATIONAL TECHNOLOGY, INC.
THREE-YEAR GEOGRAPHIC SOURCE OF REVENUE SUMMARY
(\$ millions)

	FISCAL YEAR					
	6/88		6/87		6/86	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S. (a)	\$50.9	58%	\$34.1	73%	\$22.9	81%
Europe	30.7	35%	10.6	23%	4.2	15%
Other	5.8	7%	1.9	4%	1.0	4%
TOTAL	\$87.4	100%	\$46.6	100%	\$28.1	100%

(a) Includes export sales of approximately \$3.7 million, \$3.6 million, and \$1.7 million for fiscal 1988, 1987, and 1986, respectively.

Relational Technology markets its products in the U.S. and Canada primarily through its domestic direct sales and support force.

- Products are sold and supported from the company's headquarters in Alameda and from field offices located in the metropolitan areas of Atlanta, Boston, Calgary, Chicago, Cleveland, Dallas, Denver, Detroit, Houston, Los Angeles, Minneapolis, Montreal, New York, Ottawa, Pittsburgh, Rochester, San Diego, San Francisco, Seattle, Toronto, Vancouver, and Washington, D.C.

Relational Technology markets its products outside the U.S. and Canada primarily through five wholly owned subsidiaries that sell and support the company's products in Australia, Austria, Belgium, Denmark, Finland, France, Indonesia, Ireland, Japan, Luxembourg, the Middle East, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, the U.K., and West Germany. The company also markets its products in certain foreign countries through international distributors.

COMPANY HIGHLIGHT

RELATIONAL TECHNOLOGY INC.
2855 Telegraph Avenue
Berkeley, CA 94705
(415) 845-1700

Gary Morgenthaller, President
Private Corporation
Total Employees: 67
Total Revenue, Fiscal Year End
6/30/83: \$3,025,000

THE COMPANY

- Relational Technology Inc. (RTI), founded in 1980, develops and markets relational data base management systems software and related utility packages.
- Fiscal 1983 revenue reached \$3 million, a 293% increase over fiscal 1982 revenue of \$878 thousand. A two-year revenue summary follows:

RELATIONAL TECHNOLOGY INC.
TWO-YEAR REVENUE SUMMARY
(\$ thousands)

ITEM	FISCAL YEAR	
	6/83	6/82
Revenue	\$ 3,025	\$ 878
• Percent increase from previous year	293%	N/A
Net income	\$ 244	\$ 49
• Percent increase (decrease) from previous year	397%	N/A

- As of June 1983 RTI had 67 employees. There are currently 101 employees distributed as follows:

Marketing/sales	30
Software services/customer support	13
Computer operations	35
General and administrative	<u>23</u>
	101

- RTI's major competitors include Oracle Corporation, DEC, Cincom Systems, and Software AG.

KEY PRODUCTS AND SERVICES

- Ninety-five percent of RTI's fiscal 1983 revenue was derived from license and renewal fees of RTI's relational data base management systems software packages. The remaining 5% of revenue was derived from training and consulting services.
- RTI's primary software product was originally developed by computer scientists at U.C. Berkeley in the early 1970s. The founders of RTI acquired the commercial licensing rights in 1980 and developed an enhanced commercial version called INGRES.
- INGRES, a fully integrated relational data base (RDBMS) management system and application development tool, combines an English-like query language with forms-based visual programming tools that allow end users to create, control, and view large and complex data bases without programmer assistance. Features include:
 - A comprehensive set of generic applications tools for terminal control, report generation, graphics, interactive query updates, and application development. Each application tool can be used alone or combined with customized integrated production applications.
 - The application tools are available to users when their data base is defined. Once defined, users can combine tables and select rows and columns using simple commands, thus creating updated or new data base relations.
 - An integrated data dictionary, also a relational data base, stores information about the data bases, applications, storage, integrity control, and catalogs of forms, graphs, and reports. The data dictionary is automatically updated whenever changes to any portion of the data base are made.
 - A structured English-like query language, QUEL allows users to specify what they want done. Using a single command, data from several tables can be joined together and multiple rows can be selected for updates or retrieval.
 - Commonly used command patterns can be stored and executed automatically so that the details of processing QUEL are invisible to the user.
 - QUEL also offers data definitions and protection through English-like syntax.
 - Visual programming, which is based on the concept of a "forms application," uses a video display version of printed business forms as the interactive interface to user applications. Each form represents a set of related data fields for display or entry and contains a command

menu for selecting a task. The user can thus control the underlying actions of the application by entering data into the form and selecting one of the commands from the menu.

- Additional features to INGRES include:
 - . Concurrency/transaction processing.
 - . Failure recovery.
 - . Multiple data types.
- Users can also sequence between forms or use any of INGRES's productivity tools including:
 - INGRES/FORMS^{T.M.} lets users interactively define, create, and edit forms to be used by applications with specification for validation checks and ranges and relative field values of data during entry.
 - INGRES/REPORTS^{T.M.} allows users to lay out visually formats of given reports on the screen as they would be seen on the printed page.
 - INGRES/QUERY^{T.M.} is a Visual Programming interface to QUEL's query-update service. Users can make queries and perform transactions by filling in fields on a form. Entered values act as search criteria for retrieving or updating the data base.
 - INGRES/APPLICATIONS-BY-FORMS^{T.M.} allows end users to define new applications by integrating the INGRES tools with custom designed forms and programs. All functions of an application can be created including data entry, manipulation, graphics, and report generation. Users can develop their applications one step at a time resulting in new applications that are developed through prototyping enabling developers to be more creative.
- INGRES/GRAPH.CS^{T.M.}, an optional productivity tool, displays data visually with many graphic representations including bar and pie charts, multi-line plots, and scatter plots.
- INGRES/NET^{T.M.} gives INGRES users distributed access to all data bases in a computer network connected by DECNET. All INGRES tools and applications run interactively on the users local computers with INGRES/NET, while INGRES, which acts as a data base manager, controls the processing of data at a remote location. The tools and RDBMS communicate via messages across the network. Features include:
 - Improved speed of interactive applications and overall throughput.
 - Reduced size and number of messages, thus lowering the cost of sending information over long-distance telephone lines.

- Simultaneous access by multiple users of different functions and the linking of multiple computers running INGRES that are interconnected to run larger applications.
- The INGRES product line, which runs on the DEC VAX 11/XX series under VMS or UNIX, has recently been developed to run on microcomputers. RTI's new product, MicroINGRESTM, introduced in 1983, will run on any 6800 micro-based system under UNIX. Licensing information of all INGRES products is provided in the exhibit.
- Over 30% of RTI's technical staff is dedicated to support of the INGRES product line. RTI's customer support services consist of:
 - A 24-hour, 7 day-a-week hotline service.
 - Unlimited telephone consulting.
 - Customized training.
 - Documentation.

INDUSTRY MARKETS

- RTI derived its fiscal 1983 revenue from the following industry sectors:

Discrete Manufacturing	27%
Process Manufacturing	11
Education	15
Federal Government	21
Research	13
Other	<u>13</u>
	100%

- INGRES is currently being used by more than 150 customers. Clients include Boeing, DEC, Jet Propulsion Labs, Raychem, Schlumberger, and TRW.

GEOGRAPHIC MARKETS

- Ninety-five percent of RTI's fiscal 1983 revenue was generated from the U.S. The remaining 5% came from international markets.
- U.S. sales/branch offices are located in Atlanta, Boston, Chicago, Los Angeles, New York, San Francisco, and Washington, D.C.
- RTI currently has nine U.S. OEMs including NCR, Sun Micro Systems Inc., Computer Consoles, Sequoia, InDaSys, Callan Data Systems, and Codata Systems Corporation.

RELATIONAL TECHNOLOGY INC.

EXHIBIT

RELATIONAL TECHNOLOGY INC.

PRODUCT	DESCRIPTION	PRICE	NUMBER INSTALLED	CPU REQUIREMENTS (Operating System)
INGRES ^{T.M.}	Relational Data Base Management System. (RDMS)	\$40,000 \$20,000	404	DEC VAX 11/780 and 11/750, (VMS and UNIX) DEC VAX 11/730, 11/725 (VMS and UNIX)
INGRES/Graphics ^{T.M.}	Graphics display tool	\$ 2,500	118	DEC VAX 11/XX Series (VMS and UNIX)
INGRES/NET ^{T.M.}	Distributed Access for Local Area and Global Networks	\$ 5,000 (per network mode)	7 Networks	DEC VAX 11/XX, Sun II (VMS and UNIX)
Micro/INGRES ^{T.M.}	Micro Computer based RDMS. (Retail Price)	\$ 2,000- \$ 5,000	N/A	Codata 3300 (UNIX) Dual System 83/20 (UNIX) NCR Tower 1632 (UNIX) Sun II (UNIX)

RELATIONAL TECHNOLOGY INC.

- Foreign distributors include Mesarteam S.R.L. in Italy and Inenco A/S Information Engineering Company in Norway. By mid-1984 INGRES will be sold and serviced directly in the U.K., France, Germany, and The Netherlands as well.

COMPUTER HARDWARE AND SOFTWARE

- RTI maintains 5 DEC VAX-11/750s running under VMS and UNIX at its Berkeley headquarters.

COMPANY PROFILE

RELEASE MANAGEMENT SYSTEMS

17187 N. Laurel Park Drive
Suite 204
Livonia, MI 48152
(313) 462-1200

Matt Rozek, President
Private Company
Total Employees: 30
Total Revenue, Fiscal Year End
3/31/91: +\$1,000,000

*INPUT estimate

The Company

Release Management Systems (RMS) was founded in 1982 to develop and market EDI software.

Initially, the company focused on the automotive industry, which at the time used proprietary EDI standards. RMS has since developed EDI software based on industry standards, and the company's market has grown to include a variety of industries.

In anticipation that EDI will be "everywhere," the company's strategy focuses on developing products that can be easily ported across different hardware platforms and operating systems.

Key Products and Services

One hundred percent of RMS' revenue is derived from software products.

RMS' key product, RMS-VLT (Variable Length Translator), was introduced in 1985. As its name suggests, RMS-VLT is a generic variable-length translator.

- RMS-VLT supports ASC X12, TDCC, and EDIFACT.
- RMS-VLT is available under the MS-DOS, PC-DOS, XENIX, UNIX, DEC VMS, and ULTRIX operating systems.
- Product features of RMS-VLT include the following:
 - Screen generator for document input
 - User-definable mainframe/mini/micro interface facility for import and export of document-related data
 - File import/export data editing features

- Ability to define default values pertaining to partner/document requirements
- On-line "browse" feature to assist in document-related maintenance functions
- User-definable partner and communication ID
- User-definable direct connect and/or public network communication
- Transaction set processing by document and/or partner ID
- Multiuser capability
- Industry standard COBOL
- Mainframe portability
- Customer and internal data cross-reference/conversion capability
- Unlimited number of transaction sets/versions maintained on the system
- Transaction set copy feature for ease of standards/document maintenance
- Ability to create and support unique document formats
- Automated interface with RMS applications data base
- Automated archiving system
- On-line error checking
- Password security
- Multicompany processing capability
- Unattended operation capability
- Scheduler for communications, processing, and host interface
- Inquiries and reports:
 - Selection options for generating reports and inquiries

- Transaction control reporting
 - Error/exception listings
 - Document status inquiry
 - File import/export exception listing
 - Communication file listing
 - Partner file listing
 - Transaction set listing
 - Cross-reference report
 - Generated screen format listing
- As of mid-1990, RMS had about 650 user installations.

RMS also offers training, implementation, and consulting services.

Industry Markets

RMS markets its products across industry sectors. Customers range from small to large companies in various industries, including manufacturing, distribution, health care, textile, value-added retail chains, and the federal government.

The company is evaluating marketing its EDI software to government-related industries such as aerospace.

In addition to direct sales, RMS also markets its products through resellers, value-added dealers, software system integrators, and source code licensors/resellers.

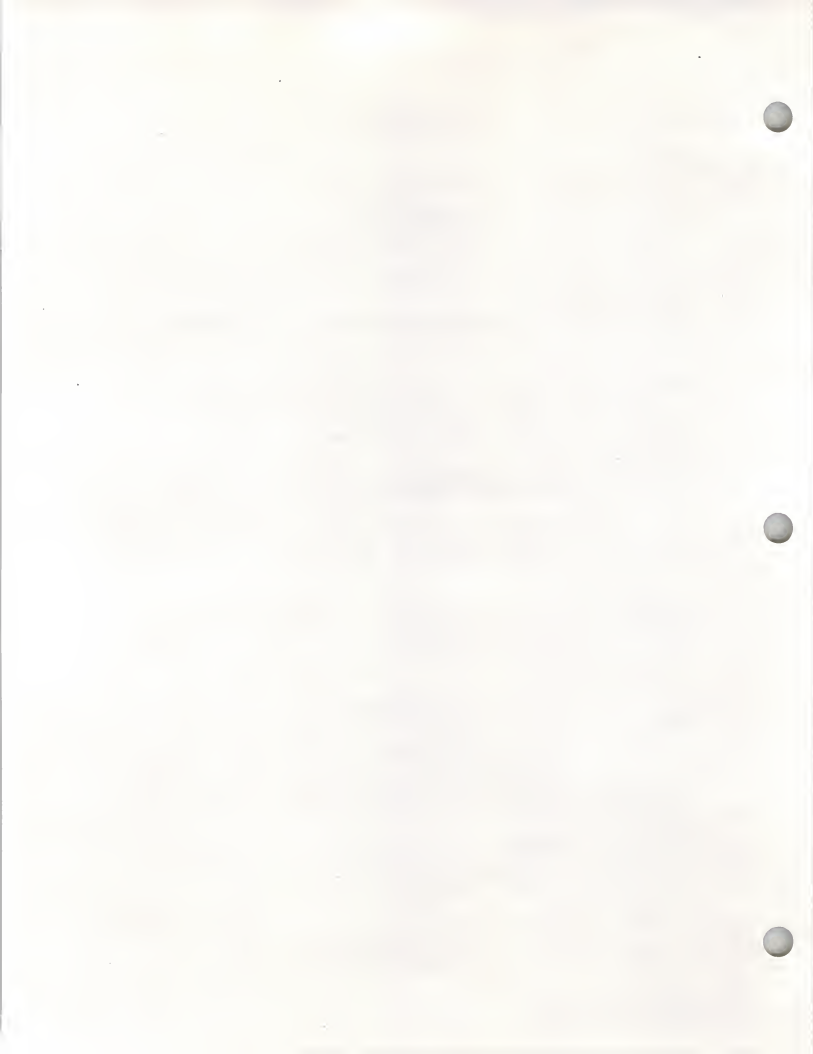
Geographic Markets

A majority of RMS' revenue is derived from the U.S. The remainder is derived from Canada, Mexico, Australia, and South Africa.

Strategies

RMS' EDI software is portable, which expands the types of computer systems that can use it. The company offers the software integrated with the product marking, bar code, accounting, and production control applications it sells. It also provides a product called The Customizer which facilitates integration with a customer's applications.

RMS strategy is to provide "complete EDI business solutions." Through diverse channels, RMS is marketing its products throughout the world.



COMPANY PROFILE

RELEASE MANAGEMENT SYSTEMS

17187 N. Laurel Park Drive
Suite 204
Livonia, MI 48152
(313) 462-1200

Matt Rozek, President
Private Company
Total Employees: 12
Total Revenue, Fiscal Year End
3/31/88: \$500,000*

*INPUT estimate

The Company

Release Management Systems (RMS) was founded in 1982 to develop and market EDI software.

Initially the company focused on the automotive industry, which, at the time, used proprietary EDI standards. RMS has since developed EDI software based on industry standards, and the company's market has grown to include a variety of industries.

In anticipation that EDI will be "everywhere," the company's strategy focuses on developing products that can be easily ported across different hardware platforms and operating systems.

Key Products and Services

RMS' key product, RMS-VLT (Variable Length Translator), was introduced in 1985. As its name suggests, RMS-VLT is a generic variable length translator.

- RMS-VLT supports ANSI X12 standards and its subsets.
- RMS-VLT is available under the MS-DOS, PC-DOS and BTOS operating systems.
 - MS-DOS and PC-DOS are used in conjunction with the IBM PC series and compatible microcomputers.
 - BTOS is Burroughs' (now Unisys') version of CTOS, an operating system developed by Covergent Technologies. The associated hardware includes Convergent Technologies' NGEN Series Workstations and MegaFrame™ Series computers.
- Product features of RMS-VLT include the following:
 - Screen generator for document input.

- User definable mainframe/mini/micro interface facility for import and export of document related data.
- File import/export data editing features.
- Ability to define default values pertaining to Partner/Document requirements.
- On-line "browse" feature to assist in document related maintenance functions.
- User definable partner and communication ID.
- User definable direct connect and/or public network communication.
- Transaction set processing by document and/or partner ID.
- Multi-user capability.
- Industry standard COBOL.
- Mainframe portability.
- Customer and internal data cross reference/conversion capability.
- Unlimited number of transaction set/versions can be maintained on the system.
- Transaction set copy feature for ease of standards/document maintenance.
- Ability to create and support unique document formats.
- Automated interface with RMS applications data base.
- Automated archiving system.
- On-line error checking.
- Password security.
- Multi-company processing capability.
- Inquiries and reports:
 - Selection options for generating reports and inquiries.
 - Transaction control reporting.

- Error/exception listings.
 - Document status inquiry.
 - File import/export exception listing.
 - Communication file listing.
 - Partner file listing.
 - Transaction set listing.
 - Cross reference report.
 - Generated screen format listing.
- The company also offers training, implementation, and consulting services.
 - RMS has about 350 user installations.
 - The company is porting its software to VMS (to run on DEC MicroVAX) and UNIX System V operating systems.

Industry Markets

RMS markets its products across industry sectors. Customers range from small to large companies in various industries, including manufacturing, distribution, and "value-added" retail chains.

The company is evaluating marketing its EDI software to government-related industries such as aerospace.

In addition to direct sales, RMS also markets its products through resellers, value added dealers, software system integrators, and source code licensors/resellers.

Geographic Markets

A majority of RMS' revenue is derived from the U.S. and the remaining from Canada, Mexico, Australia, and South Africa.



COMPANY HIGHLIGHT

REMOTE COMPUTING
1076 East Meadow Circle
Palo Alto, CA 94303
(415) 494-6111

Charles G. Calderaro, CEO
Division of Hale Systems, Inc.
Total Employees: 101
Total Revenue, Fiscal Year End
3/31/83: \$8,486,000

THE COMPANY

- Remote Computing provides remote processing services, software products, turnkey systems, and professional services primarily to the banking and finance industry, including brokerage firms and savings and loan associations.
 - Remote Computing was formed in 1966 as Remote Computing Corporation (RCC), a private company providing utility processing services. In 1968 RCC began marketing general timesharing services, specializing in financial applications.
 - In 1979 RCC became a wholly owned subsidiary of Hale Technology Corporation (HTC), a San Francisco-based holding company. This 100% interest in the company was acquired over a number of years for an aggregate price of approximately \$2.4 million.
 - During 1982 RCC also began marketing minicomputer-based turnkey systems and microcomputer software for financial applications.
 - On April 28, 1983, the operations of RCC became the Remote Computing division of Hale Systems, Inc., a company formed by HTC. Hale Systems' other operating division, Datron, designs, manufactures, and sells satellite communications, radar, and telemetry systems primarily for military and government use.
 - Hale Systems had fiscal 1983 revenue of \$24 million.
 - In June 1983 HTC made an initial public offering of 990,000 shares of Hale Systems' common stock. HTC was liquidated in September 1983 with the distribution of approximately 68% of the remaining Hale Systems' shares to former HTC shareholders.
- Remote Computing's fiscal 1983 revenue reached \$8.5 million, a 16% increase over fiscal 1982 revenue of \$7.3 million. Net income increased 345% to \$664,000 from a net loss of \$271,489 in 1982. A three-year financial summary follows:

REMOTE COMPUTING

REMOTE COMPUTING THREE-YEAR FINANCIAL SUMMARY (\$ thousands)

ITEM \ FISCAL YEAR	3/83	3/82	3/81
Revenue	\$ 8,486	\$ 7,285	\$ 12,209
• Percent increase (decrease) over previous year	16%	(40%)	4%
Income (loss) before taxes	\$ 712	\$ (271)	\$ 287
• Percent increase (decrease) over previous year	363%	(194%)	(72%)
Net income (loss)	\$ 664	\$ (271)	\$ 287
• Percent increase (decrease) over previous year	345%	(194%)	(67%)

- Remote Computing management attributes declines in 1982 revenue and income to the discontinuation of a tax refund service and termination of a facilities management contract with Chase Manhattan Bank. This contract contributed \$5.1 million to 1981 revenue and \$353,000 to 1982 revenue. Remote Computing is no longer engaged in the facilities management business.
- Increases in 1983 revenue and income resulted from the sale of new products and the increased demand for existing products and services.
- Fiscal 1983 revenue derived from the investment and savings and loan industries increased 34% and 26%, respectively, while cross-industry revenue declined 5%, reflecting Remote Computing's increasing focus on financial services markets.
- In November 1982 Remote Computing acquired PEAR Systems Corporation of Stamford (CT), developers of a multiple portfolio recordkeeping software package for the Apple II microcomputer. PEAR Systems had two employees at the time of the acquisition and a base of approximately 400 clients.

REMOTE COMPUTING

- As of March 31, 1983, Remote Computing had 101 employees. There are currently 114 employees, segmented as follows:

Marketing/sales	27
Computer operations and data base maintenance	24
Research and development	16
Customer support	31
General and administrative	<u>16</u>
	114

- Remote Computing's major competitors by service/product area include:
 - Financial Planning: Control Data Corporation.
 - Investment Services: Interactive Data Corporation, D&B Computing Services (NCSS), and Automatic Data Processing.
 - Turnkey Systems: Saddlebrook Corporation, SLIMS, and Syst  me.
 - Software Products: Dow Jones Information Services and Computrac.

KEY PRODUCTS AND SERVICES

- Remote Computing's fiscal 1983 revenue was derived approximately as follows:

	<u>Revenue (\$ thousands)</u>	<u>Percent of Total</u>
Processing services	\$ 8,215	100%
Professional services	211	-
Software products	<u>60</u>	<u>-</u>
	\$ 8,486	100%

- Ninety-five percent of Remote Computing's 1983 processing revenue was from interactive remote computing services. The remaining 5% was from remote batch processing.
- Financial applications contributed 69% of Remote Computing's processing revenue. The remaining 31% was derived from utility processing and construction, statistical analysis, and other applications.
- Remote Computing management anticipates software product and turnkey systems sales will increase during fiscal 1984 and represent a larger percent of total company revenue.
- Remote Computing's major area of specialization is providing processing services to the financial services industry, including brokerage firms, banks,

and savings and loans. These services are available in three categories as follows:

- Investment Management Systems are based on MERLIN®, an on-line daily and historical securities data base. Related programs are for investment options, securities, and commodities. MERLIN contains price/volume data for all publicly traded stock options; 12,000 stocks, bonds, and government issues; all commodity futures; and 200 market indexes, averages, and statistics. Thirty-nine percent of Remote Computing's 1983 revenue was generated by its investment products.
 - MERLIN Graphics permits MERLIN users to plot financial data graphically. Various charts can be generated including volume bars, dual securities, open interest for commodities and options, price spreads, moving average oscillators, currency conversions, and high, low, close.
 - STARS (Security Technical Alert Reporting Service) allows clients to identify potentially profitable market situations by alerting them to daily movements on all stocks traded on the NYSE and AMEX with analyses obtained from MERLIN.
 - WALL ST. WIZARD^{T.M.}, using the MERLIN service, creates analyses to provide a daily computerized news service. Clients can examine the entire market, Standard & Poors industry groups, block trading, and individual securities. WALL ST. WIZARD is scheduled for availability in late 1983 as both a processing application and microcomputer software product. It also will be available on Quotron's timesharing service.
 - LMS (Liquidity Management System) accounts for and prices all fixed-income securities in an institutional portfolio.
- Financial Planning Services are based on SLP®, a financial planning and forecasting tool. SLP provides banks and savings and loans with corporate projections of assets, liabilities, income, cash flow, loans, deposits, taxes, and regulatory liquidity, accommodating the latest government regulations. Financial Planning Services are used by over 200 client firms and contributed 26% to 1983 revenue.
 - GAP Analysis, introduced in 1982, is a planning tool used with SLP which permits clients to analyze their balance sheets in relation to the effect of changing interest rates and project future gap positions using various interest rate formats.
 - SCAN^{T.M.} (Savings Comparative Analysis) permits clients access to the Federal Home Loan Bank Board's (FHLBB) financial data on its 3,800-member savings and loan institutions. Using on-line, semi-annual FHLBB data formats, SCAN instantly generates information on industry trends, peer group, and merger analyses.

- Merger Acquisition Analysis Service is used to analyze merger strategy, allowing clients to review potential merger candidates by providing access to FHLBB data on all reporting associations. When used in conjunction with SLP, long-range merger implications can be forecasted.
- Mortgage Services accounted for 4% of 1983 revenue.
- The MORTGAGE INDEX^{T.M.} provides on-line daily information on the secondary mortgage market. Auction results from FNMA and FHLMC, state of the economy, mortgage and related markets, nationwide data on mortgage rates, and pertinent national financial news are available. Services provided by the MORTGAGE INDEX are also available through Telerate, Inc. and Reuters, Ltd.
- The Loan Control System is used by mortgage loan officers to analyze and report portfolio statistics and plan future loan offerings. Loans are sorted and analyzed by variables including commitment status, loans in process, settlements, rejections/cancellations, and census tract. Customized management and regulatory reports are provided.
- Remote Computing provides processing to Computer Construction Control Corporation's clients in the construction industry via a remote batch service called System Five. The service generates inventory reports, calculates payroll, issues checks, monitors accounts payable, allocates job costs, maintains union records, and provides accounts receivable information.
- A profile of applications available on Remote Computing's network is shown in the exhibit.
- Several products are no longer actively marketed by Remote Computing including MSAS^{T.M.} (Mortgage Security Analysis System), the JUPITER^{T.M.} loan tracking and document and loan servicing system, and BASST^{T.M.} (Bond Analysis Spread System).
- Remote Computing also offers a disaster recovery and overflow service for large Burroughs installations.
- Professional services provided by Remote Computing include the design and programming of investment management systems for use in conjunction with MERLIN data base services.
- Remote Computing began offering applications software for microcomputers in 1982.
- Dial/Data, introduced in early 1982, permits Apple II and IBM PC microcomputer users to access Remote Computing's MERLIN data base. It is used in conjunction with statistical modeling, portfolio management, and graphics programs.

EXHIBIT

REMOTE COMPUTING NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
● OPERATING ENVIRONMENT – 1 BURROUGHS B7800, MCP ● PROGRAMMING LANGUAGES SUPPORTED – ALGOL – BASIC – COBOL – FORTRAN – PL/1 ● DATA MANAGEMENT – BURROUGHS DMS – INSYTE ● DATA BASES – MERLIN (INVESTMENTS) . SECURITIES . FUTURES . BONDS . INDICES . OPTIONS – MORTGAGE INDEX (SECONDARY MORTGAGE MARKET) – FHLBB SEMIANNUAL FINANCIAL DATA ● FINANCIAL PLANNING – SLP – GAP ANALYSIS – FORESIGHT – SCAN (SAVINGS COMPARATIVE ANALYSIS) – MERGER ACQUISITION ANALYSIS SERVICE	● INVESTMENT ANALYSIS AND MANAGEMENT – LMS (LIQUIDITY MANAGEMENT SYSTEM) – MERLIN GRAPHICS – STARS (SECURITY TECHNICAL ALERT REPORTING SERVICE) – WALL ST. WIZARD – PORTFOLIO SYSTEMS – HEDGING . SPECIFIC HEDGE . FIXED RATE LOAN ● MORTGAGE MARKET – LOAN CONTROL SYSTEM – TRUTH IN LENDING PROGRAMS – PORTFOLIO PROFILING SYSTEMS ● CONSTRUCTION ACCOUNTING (SYSTEM FIVE) – PAYROLL/LABOR DISTRIBUTION – GENERAL LEDGER – ACCOUNTS RECEIVABLE – ACCOUNTS PAYABLE – JOB COST ACCOUNTING – LABOR PRODUCTIVITY – PURCHASING ● STATISTICAL – SPSS – SCSS – TSP ● OTHER – DISASTER RECOVERY

REMOTE COMPUTING

- The package licenses for \$30 and has a minimum network access charge of \$45 per month. There are over 300 users of Dial/Data systems.
- As a result of the acquisition of Pear Systems Corporation in late 1982, Remote Computing introduced several software products for investment management which run on the IBM PC and Apple microcomputers.
 - PEAR Portfolio Management System provides stockbrokers, advisors, and professional investors with a complete transaction recordkeeping and portfolio reporting system. Reports include portfolio appraisal, realized and unrealized capital gain and loss, security cross-reference, income statement, and complete audit trail. The software is priced at \$695.
 - PEAR Technical Analysis is a graphics and modeling system designed for professional research analysts and portfolio managers. The package simulates trading models for trading technique evaluation using historical data and is priced at \$1,450.
 - Remote Computing plans to introduce additional microcomputer products for broker reconciliation and hedging.
- In October 1982 Remote Computing announced it had reached an agreement with Priority Plus Corporation (PPC) of California to market minicomputer-based turnkey systems using PPC's financial applications software.
 - The software runs on IBM Series/1 and Datamedia 932 equipment under the PICK operating system.
 - Software modules available include General Ledger, Construction Loan Control, Mortgage Loan Origination and Tracking, Personnel Management, Property Control, Purchasing and Inventory, Accounts Payable, Scheduled Amortizations, and Financial Planning Aids.
 - The software modules are priced from \$4,000 to \$20,000 each. Hardware configurations range in price from \$20,000 to \$200,000.

REMOTE COMPUTING

INDUSTRY MARKETS

- A three-year summary of Remote Computing's source of revenue follows (\$ thousands):

FISCAL YEAR ITEM	3/83		3/82		3/81	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Investment industry (brokerages)	\$ 3,287	39%	\$ 2,460	34%	\$ 2,012	16%
Savings and loan industry	2,561	30	2,040	28	1,723	14
Cross- industry	<u>2,638</u>	<u>31</u>	<u>2,785</u>	<u>38</u>	<u>8,474</u>	<u>70</u>
Total	\$ 8,486	100%	\$ 7,285	100%	\$ 12,209	100%

- Remote Computing's 10 largest customers accounted for approximately 37% of revenue in fiscal 1983. Merrill Lynch Pierce Fenner & Smith Inc., the largest customer, accounted for 12% of revenue.

GEOGRAPHIC MARKETS

- One hundred percent of Remote Computing's fiscal 1983 revenue was derived from clients in 40 U.S. states.
- Remote Computing maintains sales offices in Atlanta, Denver, Los Angeles, New York City, Roslyn (NY), and Washington, D.C.

COMPUTER HARDWARE AND SOFTWARE

- Remote Computing has the following computers installed at its Palo Alto data center:
 - 1 Burroughs B7800, operating under MCP, for timesharing services.
 - 1 IBM Series/1, operating under PICK, for development.
 - Microcomputers from various vendors, including IBM and Apple.
- Users access Remote Computing's network via dial-up and WATS lines or Telenet.

COMPANY HIGHLIGHT

REMOTE COMPUTING CORPORATION
1076 East Meadow Circle
Palo Alto, CA 94303
(415) 494-6111

Irwin Rector, Chairman
Charles G. Calderaro, President
and CEO
Wholly Owned Subsidiary of
Hale Brothers Associates
Total Employees: 160
Total Revenues, Fiscal Year End
3/31/80: \$11,913,636

THE COMPANY

- Remote Computing Corporation (RCC) was formed in 1966 to provide general utility processing services nationwide. Under a joint development effort with the Burroughs Corporation, the B-5500 timesharing system was developed. RCC began marketing general timesharing services in 1968. RCC has since specialized in providing financial planning, investment management and accounting, and mortgage processing services.
- In November 1979, RCC was acquired by Hale Brothers Associates, a San Francisco based holding company active in computer services and communications, real estate and construction. Terms of the acquisition were not disclosed.
- In 1980, RCC changed its fiscal year end date to coincide with its parent. For an eleven-month period ending March 31, 1980, the company reported revenues of \$11.9 million. Revenues calculated on a twelve-month basis would have placed RCC at \$13 million, a 53% increase over 1979's revenues of \$8.5 million. RCC anticipates its FY 1981 revenues will be \$15 million or more.

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

RCC
FIVE-YEAR FINANCIAL SUMMARY
(\$ Thousands)

FISCAL YEAR ITEM	Eleven Months Ending	Twelve Months Ending 4/30			
	3/31/80	1979	1978	1977	1976
Total revenues	\$11,914	\$ 8,548	\$6,620	\$ 6,892	\$ 7,205
Income (loss) before taxes and extraordinary item	1,013*	332*	(685)*	104*	66*
Net income	876	818	(685)	204	148

* Extraordinary item reported

- RCC's decline in revenues and profit losses in FY 1978 were due to the loss of a large processing contract with Pacific Telephone.
- Revenue increases and RCC's return to profitability in FY 1979 and 1980 were attributed to:
 - A contract award with the Chase Manhattan Bank, which will provide RCC with \$11.5 million in revenues over a two-year period.
 - Increased sales of its timesharing services to other large-scale Burroughs users, including the Burroughs Corporation.
 - A gain in revenues from services provided to the thrift and securities industries.
- RCC has made two acquisitions within the last year.
 - In July 1979, RCC acquired the nonprofit organization AMMINET, Inc. (formerly Automated Mortgage Market Information Network Inc.). AMMINET provides information on trading loan packages, advisory services, pricing information and a news service. AMMINET has been renamed The Mortgage Index and operates as a wholly owned subsidiary of RCC.

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

- Fiscal Recovery Associates (FRA) of San Mateo (CA) was purchased in July 1980. FRA provides consulting/auditing services to corporations to recover overpayments of social security taxes. FRA will operate as a division of RCC.
- RCC's 160 employees are segmented as follows:

Marketing	65
Operations	80
Executive and administrative	<u>15</u>
	160
- Competition to RCC's services are derived from:
 - Financial Planning: Service Bureau and McSweeney & Associates.
 - Investment Services: Interactive Data, National CSS and Automatic Data Processing.
 - Construction Industries: Structural Accounting and IBM.

KEY PRODUCTS AND SERVICES

- Approximately 99% of RCC's FY 1980 revenues were derived from processing services and 1% from professional services.
 - Processing revenues are equally divided between interactive and remote batch (50% each).
 - Financial applications contribute 90% of RCC's total revenues. The remaining 10% is derived from general utility processing.
- RCC's major area of specialization is providing services to the thrift and securities industry. Major products in this category include:
 - SLP[®], a financial planning system, tracks how funds flow through a savings and loan association from source to use. It provides management reports including cash flow, income statement of condition and tax reports, and projects the financial condition and operating results for an association for future periods.
 - SLP is used by 150 firms and produces 8% of RCC's total revenues.
 - FPS[™], a financial tool for mutual savings banks, commercial banks and mortgage bankers. It provides full corporate projections of assets, liabilities, income, cash flow, loans, deposits, taxes and regulatory liquidity.

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

- Branch Profitability Model, a tool for S&Ls to analyze new branch strategies and existing branch profitability.
- MERLIN[®], a data base with related programs for investment options, securities and commodities. MERLIN contains price/volume data for all publicly traded stock options; 11,000 stocks, bonds and government issues; 120 commodity futures; and 100 market indexes, averages and statistics.
 - Eight percent of RCC's revenues are generated by MERLIN.
- BASS^{T.M.} (The Bond Analysis Spread System), a data base containing over 450 fixed-income securities, including corporates, treasuries, agencies and mortgage backs. It is a complete bond analysis and information system to aid buyers and sellers of fixed income securities.
- The Mortgage Index^{T.M.}, which provides real-time national market information on large residential, commercial and CNMA mortgage offerings.
 - Services provided by the Mortgage Index are also available through Reuters Ltd. and Telerate, Inc. Paine Webber Real Estate Securities, Inc., provides secondary market brokerage facilities and a full-time, on-call advisory service.
- Three new products for the thrift industry have been introduced within the last year.
 - MSAS^{T.M.} (Mortgage Security Analysis System) provides cash flow analysis required to assess the potential profitability of issuing a mortgage security.
 - SCAN^{T.M.} (Savings Comparative Analysis) is targeted for use by the thrift industry and organizations that service that industry, such as CPA firms, brokerage firms and commercial banks. SCAN makes use of semiannual reports prepared by the Federal Home Loan Bank (FHLB) and from forms submitted by over 4,000 member S&Ls. It enables an organization to do rough forecasts of particular S&Ls, or groups of S&Ls, with peer group comparisons and competitive evaluations.
 - JUPITER^{T.M.}, integrated with RCC's Mortgage Index, incorporates loan tracking and document and loan servicing for mortgage processing activities.
- For the construction industry, RCC offers a remote batch service called System Five. Sold in California, Nevada and Arizona, System Five is used to generate inventory reports, calculate payroll, issue checks, monitor accounts payable, allocate job costs, maintain union records and provide accounts receivable information.
- A profile of applications on RCC's network is presented in Exhibit A.

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

EXHIBIT A

RCC NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
• OPERATING ENVIRONMENT – BURROUGHS B7700 MCP • PROGRAMMING LANGUAGES SUPPORTED – ALGOL – BASIC – COBOL – FORTRAN – PL/1 • DATA MANAGEMENT SOFTWARE – DMS II – INSYTE • DATA BASES AVAILABLE – BASS (BOND ANALYSIS) – MERLIN (INVESTMENTS) – MORTGAGE INDEX (SECONDARY MORTGAGE MARKET) • FINANCIAL PLANNING – SLP (FOR S & Ls) – FPS (FOR BANKS) – BRANCH PROFITABILITY MODEL (FOR S & Ls) – RESPONSIBILITY CENTER REPORTING (BUDGETING TOOL) – FORESIGHT – SCAN (SAVINGS COMPARATIVE ANALYSIS) • INVESTMENT ANALYSIS AND MANAGEMENT – LMS - LIQUIDY MANAGEMENT SYSTEM (SECURITIES ACCOUNTING AND MANAGEMENT)	• MORTGAGE MARKET – LCS - LOAN COMMITMENT AND APPLICATION TRACKING – MSAS (MORTGAGE SECURITY ANALYSIS SYSTEM) – JUPITER (TOTAL MORTGAGE PROCESSING SYSTEM) – LOANEVAL (LOAN CALCULATIONS) • CONSTRUCTION ACCOUNTING (SYSTEM FIVE) – PAYROLL/LABOR DISTRIBUTION – GENERAL LEDGER – ACCOUNTS RECEIVABLE – ACCOUNTS PAYABLE – JOB COST ACCOUNTING – LABOR PRODUCTIVITY – PURCHASING • STATISTICAL – SPSS – SCSS – TSP • OTHER – FIXED ASSET ACCOUNTING (FAA) – LIBRARY OF FINANCIAL PROGRAMS – RECOVERY

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

- RCC has large processing contracts with Chase Manhattan Bank and Merrill Lynch.
- RCC also offers a Disaster Recovery Service for large Burroughs installations.
- New product offerings planned by RCC will center around integrating financial products on mini/microprocessors for vertical markets. Highest growth areas will be from the mortgage and savings and loan industries.

INDUSTRY MARKETS

- Following is an approximate distribution of RCC's FY 1980 revenues:

- Banking and finance	85%
(thrift institutions, banks	
brokerage firms)	
- Other industries	15
(construction, utilities,	
manufacturing, insurance)	
	100%

GEOGRAPHIC MARKETS

- Approximately 40% of RCC's revenues is derived from New York and 20% from California. The remaining 40% comes primarily from Illinois, Florida, Colorado, Texas and Minnesota, with most of the remaining states having some customer revenues.
- RCC maintains offices in San Diego, Los Angeles, Milwaukee, New York City, Roslyn (NY) and Chicago.

COMPUTER HARDWARE AND SOFTWARE

- RCC's data centers are in Palo Alto (CA) and New York. Both centers have two Burroughs B7700s, operating under MCP.
- RNET, RCC's data communications network, uses Interdata Model 50 mini-computers for network nodes in Los Angeles, Washington (DC) and Milwaukee. Network nodes and hosts are connected by cross-country telephone lines and satellite links.
 - Network access is by telephone dial-up via direct line (local or long-distance WATS) or through Tymnet. Use of Telenet's network is currently in a test mode.

COMPANY HIGHLIGHT

REMOTE COMPUTING CORPORATION

1070 East Meadow Circle
Palo Alto, CA 94303
(415) 494-6111

Irwin Rector, Chairman & CEO
Charles G. Calderaro, President
Private corporation
Total employees: 80
Total revenues fiscal year end
4/30/78: \$6,600,000*

THE COMPANY

- Remote Computing Corporation (RCC) was founded in 1966 as a California corporation. Initially RCC provided "raw-time" on-line services. It has since added specialized processing services to securities, thrifts and other financial institutions.
- For the fiscal years 1978 and 1977 employees were distributed by function as follows:

	<u>1978</u>	<u>1977</u>
- Marketing/sales	8	11
- Software services/customer support	32	49
- Computer operations	22	42
- General & administrative	13	19
- Data base	<u>5</u>	<u>5</u>
	80	126

- Revenues for fiscal 1979 are projected to be approximately \$5,000,000, a 24% reduction from \$6,600,000 for fiscal 1978.
 - Management attributes the decline to a major reduction in revenues from a large customer that is moving processing services in-house. This account represented about 58% of fiscal 1977 revenues.
 - Exhibit I presents a five year financial summary of RCC.

* Management estimate

September 1978

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

EXHIBIT I

FIVE YEAR FINANCIAL SUMMARY, RCC (\$000 except earnings per share)

Item \ Fiscal Year	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>
Revenues	\$ 6,600*	\$6,892	\$7,205	\$6,836	\$3,967
Income before tax and extraordinary items	\$ a	104	66	89	30
Net income after tax and extraordinary item	\$ a	204	148	191	239
Earnings per share	\$ a	1.70	1.43	1.21	1.02
No. of employees	80	127	151	145	103

a Not available at press time. Management did not provide income data but indicated that the company incurred losses in fiscal year 1978.

KEY PRODUCTS AND SERVICES

- Processing services generated most of fiscal 1978 revenues, as reflected in the distribution below:

- Processing services	90%
- Software products	2
- Professional services	1
- Other: supplies, terminals, and other billable expenses	7
	100%

* Management estimate

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

- Approximately 72% of processing services revenues were generated by remote computing and 28% by batch services.
 - Interactive remote computing generated approximately 99% and remote batch 1% of remote computing services revenues.
 - RCC provides industry specialty, general business, utility and scientific and engineering applications, as reflected in the following table of remote computing products.

REMOTE COMPUTING CORPORATION's SERVICES

<u>Product Name</u>	<u>Application</u>	<u>No. of Users</u>	<u>% Revenues Generated</u>	<u>RCS Vendors Offering Besides RCC</u>
AMMINET	Secondary mortgage market data base	110	3	Telerate
SLP	Savings & loan financial planning model Model Investment	100	9	Various
LMS	Portfolio management	40	5	Various
MSB	Planning model for mutual savings banks	5	1	Various
MERLIN	Securities, options, and commodities data	60	11	Various
System V	Construction accounting	15	2	Various
General Timesharing	Various	85	69	Various
TOTAL		415	100%	

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

- AMMINET, Automated Mortgage Market Information Network, was started in 1974 and became the first remote computing service to serve the secondary mortgage market. AMMINET is a non-profit corporation formed by several banking and financial associations which oversee the network services. Its purpose is to increase the liquidity of mortgage investments by making it easier to buy and sell these investments.
- SLP, Savings and Loan Financial Planning, tracks how funds flow through savings and loan associations from source to use. It produces 11 reports, including cash flow, income statement, budgets of loans and savings and tax summary and detail.
- LMS, Liquidity Management System, is a portfolio accounting and management system developed by RCC. Users can record any buy or sell transaction and future commitments to buy and sell. Investments handled with LMS include U.S. Treasury and U.S. Agency issues, Bankers' acceptances and Repos.
- MSB, Mutual Savings Bank, tracks how funds flow through a mutual savings bank from source to use. Reports produced are similar to SLP and include cash flow, income statement, tax summary and detail, balance sheet, and loan schedule.
- MERLIN Systems, now totally integrated into RCC operations, was a New York based company acquired by RCC in 1974. It developed on-line data bases for securities options and commodities markets. Merlin continues to provide data on options, securities, commodities, market indexes, and statistics.
- System V, is an accounting service for contractors which was developed by a midwestern firm.
- Software products revenues are generated by the occasional sale of the proprietary software available through the RCC remote computing services.
- Professional services consist of occasional programming and systems design to tailor software to specific customer needs.

APPLICATIONS

- Processing applications generated fiscal 1978 revenues approximately as follows:

General business	16%
Scientific & Engineering	9
Utility	10
Industry specialty	<u>65</u>
	100%

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

- Specialty services are primarily sold to the banking and finance and utility industries.

INDUSTRY MARKETS

- Fiscal 1978 revenues were distributed by industry as follows:

-	Utilities		47%
-	Banking & Finance		35
	Thrift (savings and loans, credit unions)	24	
	Brokerage institutions	11	
-	Other industries, including construction, manufacturing, insurance, etc.		18
			100%

- RCC's more than 500 users include:

Allstate Savings, Los Angeles
American Telephone & Telegraph
California Federal Savings
Coldwell Banker & Co.
County of Los Angeles
Dime Savings Bank
Drexel, Butman, & Lambert, Inc.
Ernst & Ernst
Government Services Savings
Great Western Savings & Loan
Merrill Lynch, Pierce, Fenner & Smith
Mortgage Guaranty Insurance Co.
Pacific Architects and Engineers
Pacific First Federal Savings & Loan
Pacific Telephone and Telegraph Co.
Pain Webber, Jackson & Curtis Inc.
Palo Alto Unified School District
Peat Marwick Mitchell & Co.
PMI Mortgage Insurance
University of California
American Electronics Manufacturers' Association (formerly known as WEMA)

COMPANY HIGHLIGHT/REMOTE COMPUTING CORPORATION

GEOGRAPHIC MARKETS

- RCC revenues are generated entirely in the U.S., and primarily in the Pacific states, as shown by the following distribution of fiscal 1978 revenues:

- New England (mostly Connecticut, Maine, Vermont)	1%
- Middle Atlantic	11
- East North Central (mainly Illinois, Michigan, Ohio, Wisconsin)	2
- West North Central (mostly Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska)	2
- South Atlantic (mostly District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia)	5
- East South Central (Alabama, Mississippi, Tennessee)	1
- West South Central	1
- Mountain (Arizona, Colorado, New Mexico, Utah, Wyoming)	2
- Pacific	<u>75</u>
	100%
- Branch offices are located in Los Angeles, CA, and Roslyn, NY.

COMPUTER HARDWARE AND SOFTWARE

- Processing services are provided on one Burroughs B 7765. It was purchased in December 1976 to replace a Burroughs B 5700 and a Burroughs B 6700.
- RNET, RCC's data communications network uses Interdata Model 50 Series minicomputers in New York, Los Angeles, and Palo Alto to link users to its B 7765. Users in other cities have access through Tymshare's TYMNET or IN-WATS lines.
- Terminals supported by RCC include equipment manufactured by Hazeltine, Univac, Texas Instruments, Anderson-Jacobson, Digital Equipment Corporation, Xerox, Execuport, and Tektronix.

COMPANY BRIEF

Primary Industry-Specific Market: Services (Real Estate)

Republic Service Bureau Inc.

19110 Van Ness Avenue
Torrance, CA 90501
(213) 533-0211

CEO: Jerome A. Sorkin, President
Private Company
Founded: 1961

Employees: 100 (11/86)
Revenue (FYE 10/31/86): \$7,000,000*

The Company: Republic Service Bureau Inc. provides property management and accounting applications via processing services to real estate firms and other industries

Sources of Revenue:

- Processing Services (100%)

Key Products and Services:

- Processing Services (Utilizes an IBM 4381 mainframe computer)
 - Republic Service Bureau provides the following applications through batch processing or on-line processing via phone lines:
 - Accounts payable system
 - Accounts receivable system
 - General ledger system
 - Payroll system
 - Order entry system
 - Inventory control system
 - Residential condominiums property management system
 - Commercial high rise property management system
 - Mini warehouse property management system
 - Mortgage receivables system
 - Investor system for syndication which can produce K-1 forms
 - Job costing system for builders, developers, and others
 - Job costing system for architects and engineers
 - Utility billing system
 - Accountant/attorney timekeeping system
 - Name and address mailing list and labels system

Target Industries:

- Real estate (50%)
- All others (50%)

*Company estimate

December 1986

Geographic Markets:

- U.S. (100%)
- Direct sales

December 1986

COMPANY BRIEF

Primary Industry-Specific Market: Education

Resource Control Systems, Inc.

P.O. Box 108
City Island, NY 10464
(216) 991-3350

CEO: Robert Rosen, President
Private Company
Founded: 1980

Employees: 12 (11/86)
Revenue (FYE 12/31/86): \$500,000*

The Company: Develops and markets systems software and a package for the management of academic institutions

Sources of Revenue:

- Application Software (95%)
- Systems Software (5%)

Key Products:

- Application Software Products (Utilizes IBM microcomputers and DEC mini-computers)
 - Academic Management and Planning Package (EduCalc)
- Systems Software Products
 - Artificial intelligence-based system software (new product)

Target Industries:

- Education (75%)
- Cross Industry (25%)

Geographic Markets:

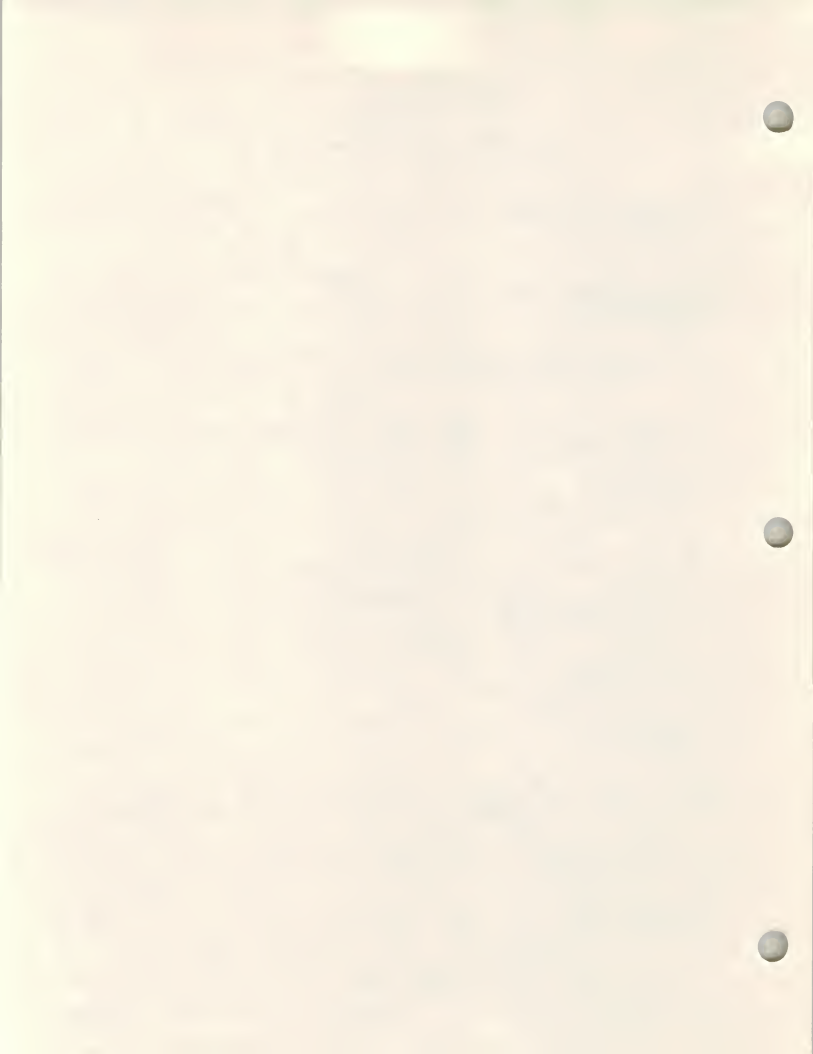
- U.S. (100%)
- Sales Office: New York

Other:

- The higher education market will represent a declining portion of the company's business

*INPUT estimate

December 1986



RETIX

2401 Colorado Avenue
Santa Monica, CA 90404-3563
Phone: (310) 828-3400
Fax: (310) 828-2255

Chairman & CEO:	Steve Frankel
Status:	Public
Total Employees:	430
Total Revenue:	\$70,841,000
Fiscal Year End	12/31/92

Key Points

- Retix is a leading supplier of Open Networking hardware and software products, based on Open Systems Interconnection (OSI) standards and sold to end-user and OEM markets.
- In 1992, the Army Information Systems Engineering Command completed a project using X.400 products to allow users of 14 different e-mail system in 40 organizations in the Pentagon to communicate with each other.
- Retix realized a 98% increase in revenue during fiscal 1992 (fiscal year end 1/2/93).
- In June 1993, Retix announced new software for its RX 7000 router that compresses data by a 4 to 1 ratio for transmission over wide-area networks.
- On June 7, 1993, Retix announced that it is in beta test with Retix X.400 for NetWare Global MHS and that the product will be available through the Novell distribution channel within 60 days of June 7, 1993.
- Retix's offering for the messaging market is positioned to take advantage of an emerging standard for e-mail interoperability, X.400.
- In April 1993, shareholder lawsuits were filed against Retix management alleging, among other things, that CEO Steve Frankel and four vice presidents sold nearly 60,000 shares of Retix stock just one month before disclosing that the company would incur a revenue reduction of 15% for the first quarter of 1993. The company believes it has meritorious defenses to the lawsuits.

Company Description

Retix, founded in 1985, designs, manufactures, and markets open networking products including connectivity products such as bridges and routers, and interoperability products based on OSI standards.

Initial financing for the company was provided by employees and private investors. Three additional financings were subsequently completed with U.S. and European venture capital investors, which include Bigler/Crossroads, First Venture Capital Investments, Fleming Ventures, Ltd, Hancock Venture Partners, Menlo Ventures, Montgomery Securities, Sevin Rosen Management Company, Philadelphia Ventures, and European corporate investors.

Organization

U.S. field sales offices are located in Chicago (IL), Cleveland (OH), Dallas (TX), Irvine (CA), Iselin (NJ), Reston (VA), San Francisco (CA), San Jose (CA), and Washington, D.C. Additional facilities are located in Santa Monica and Chatsworth (CA).

European offices are located in Italy, France, Germany, and the U.K. Additional facilities are located in Australia, Canada, and Ireland.

Strategy

Key to understanding Retix strategy is understanding its positioning on the support of OSI. Retix continues to make OSI a cornerstone of its strategy for product development in the future. The company believes that the OSI environment offers some important additions to interoperability in a multiplatform environment.

However, though OSI has gained market support internationally, other than the federal adoption of the GOSIP standard, OSI has not gained the same market acceptance in the United States.

Retix market success may also be challenged by the growth of asynchronous transfer mode (ATM) technologies. Most router vendors are trying to fortify their current market position while slowing evolving router technology into the roll that ATM requires. To make the transition most router vendors have partnered with another vendor to bring an ATM DSU (Data Service Unit) to market. Retix has been involved in an alliance with Adaptive/N.E.T. to provide an ATM interface on the Retix router, Routerxchange 7000™ (RX 7000) that inter-operates with Adaptive's ATMx. Retix is planning on providing interoperability with other vendor's switches as well.

Retix President Steve Frankel in a press interview said that Retix management believes that the primary application for ATM in 1993-1994 will be as a LAN backbone in the corporate environment. To

address that market Retix has released the RX 7000 with a built-in ATM interface.

Financials

Retix's 1992 revenue reached \$70.8 million, a 17% increase over 1991 revenue of \$60.4 million.

- A five-year revenue summary follows:

**RETIX
FIVE-YEAR REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR				
	1992	1991	1990	1989	1988
Revenue	\$70.8	\$60.4	\$52.4	\$35.9	\$27.2
· Percent increase from previous year	17%	15%	50%	32%	100%

Net income for the fiscal year increased to \$8,016,000 up 98% from \$4,044,000 for fiscal 1991. Net income per share for the 1992 fiscal year was \$0.47, up from \$0.29 earned during 1991.

For the 1992 fiscal year, net income increased to 11.3% of sales.

On July 27, 1993 Retix reported a loss for the second quarter of 1993. The company said that decreased revenue and a second quarter restructuring charge were the primary causes of the loss for the quarter of \$1,985,000, or \$0.12 per share compared to net income of \$1,824,000 or \$0.11 per share in the same quarter last year.

Management attributed the quarters results to a weakened European economy, and product transition issues as Retix expands its product offerings in the multiprotocol router market.

Key Products and Services

Approximately 48% of 1992 revenue was derived from Retix' OSI Technology and End-User products. The remaining 52% of revenue was derived from internetworking devices.

Retix products are currently organized in to the following product categories:

- OSI Technology Products
- OSI End User Products

- Internetworking Products

OSI Technology Products:

Retix's OSI Technology Products include OSI protocol software that is licensed to OEMs for use in their product lines. Each package implements a particular OSI protocol in the C language. The customer ports this implementation to the particular operating environment and proceeds to develop a functional system.

- Retix is a leading supplier of OSI technology products worldwide, with over 250 OEM customers. The customer base includes virtually every leading computer and communications manufacturer.
- The complete product line addresses all seven layers of the OSI model, from physical through application level.
- Current Retix OSI portable software products include:
 - 1984 and 1988 CCITT X.400 Message Handling Systems
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 - CCITT X.500 Directory System Agent Kernel
 - ISO Manufacturing Message Service
 - MAP/TOP 3.0 Common Management Information Protocol (CMIP)
 - Network Management Forum (CMIP)
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 - File Transfer, Access and Management
 - Association Control Service Elements
 - Remote Operation Service Elements
 - OSI Presentation Protocol
 - OSI Session Protocol (BCS, BSS, BAS, and Full)
 - OSI Transport Protocol (Classes 0, 2, and 4)
 - ISO Connectionless Network Protocol
 - Subnetwork Dependent Convergence Function for IP to X.25
 - ISO End System to Intermediate System Routing Exchange Protocol
 - CCITT X.25 Packet Level Protocol
 - CCITT X.25 Link Access Protocol B
 - OSI Logical Link Control (Classes 1, 2, and 3)
 - ISO Remote Data Base Access (RDA) Protocol
 - ISO Distributed Transaction Processing (DTP) Service Elements
 - Intermediate System to Intermediate System Routing Exchange Protocol

OSI End User Products:

To take advantage of end-user movements to OSI in some specific markets and for some specific applications, Retix has developed "shrink-wrapped", end-user OSI products.

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 - Retix has developed a complete line of GOSIP-compliant products for OSI applications such as X.400 Message Handling System, X.500, VT (Virtual Terminal) for UNIX and DOS, and FTAM (File Transfer, Access, and Management) to satisfy this requirement.
 - Retix has announced contract wins from the U.S. Air Force's Standard Multiuser Small Computer Requirements Contract (SMSCRC) and Desktop III Contract. Retix has also been selected by prime contractor Electronic Data Systems (EDS) to provide GOSIP products for the U.S. Army Information Systems' Small Multiuser Computer (SMC) contract.
- In the corporate environment, the OSI protocol X.400 is becoming the standard of choice for electronic mail interconnection. Retix has developed the OPENServer 400™ series, a PC LAN-based message server that runs on a standard 386 PC and allows proprietary e-mail systems to talk to each other, as well as to minicomputer and mainframe-based e-mail systems and public and private e-mail networks.
 - Retix has partnered with various e-mail vendors to ensure the development of gateways to link OPENServer 400 with their e-mail packages. Partners include: Alfalfa Software, Inc., cc:Mail, Data Access Corporation, DaVinci Systems, Eicon Technology, Enterprise Solutions Limited, Hewlett-Packard, Higgins Group Productivity Software, Microsoft, Novell, OCP, Oracle, U.S. Sprint, and WordPerfect.

Internetworking Products:

Retix is also a supplier of internetworking devices, including bridges, bridge/routers, and network management systems.

- Network management products include 5025 Network Management Center and 5010 Network Management Center.

- Bridging (Local) products include 4660 High Performance Local Bridge, and the 2200 Series Local Bridges.
- Bridging (Remote) products include 4880 High Performance Remote Bridge, 4850 Remote Bridge, and the 4810 Remote Bridge.
- Routing products include 4760 Local Bridge/Router, the 4900 series of Remote Bridge/Routers, and the ROUTERXchange 7000 series. The RX 7000 is an advanced multiprotocol router. This router is designed to integrate Ethernet, Token-ring, FDDI, and ATM segments in an enterprise-wide network.

Alliances

Retix and Adaptive/N.E.T. have an alliance to evolve router technology into the roll that ATM requires. To make the transition most router vendors have partnered with another vendor to bring an ATM DSU (Data Service Unit) to market. Retix has been involved in an alliance with Adaptive/N.E.T. to provide an ATM interface on the Retix router that inter-operates with Adaptive's ATMx. Retix is planning on providing interoperability with other vendor's switches as well.

In 1993, Retix and Novell have partnered to deliver Retix X.400 for NetWare Global Messaging, an X.400 NLM that will run under Novell's X.400 Protocol Access Module.

In 1993, Retix and Transarc Corporation announced a development and marketing agreement to jointly promote the use of OSI Transaction Processing (OSI/TP) as means of interoperability in OLTP environments. Retix in collaboration with Transarc will market a transaction processing Communication Resource Manager product. This agreement follows the Retix and Transarc agreement regarding the integration of the Retix OSI/TP functions with Transarc's Encino Toolkit.

Competition

Key competitors include Cisco Systems and Wellfleet Communications for the bridge and router products.

Clients

Customers include manufacturers of computer and communications equipment, systems integrators, value-added resellers, and large end-users with a need to interconnect computers, devices, and local- or wide-area networks.

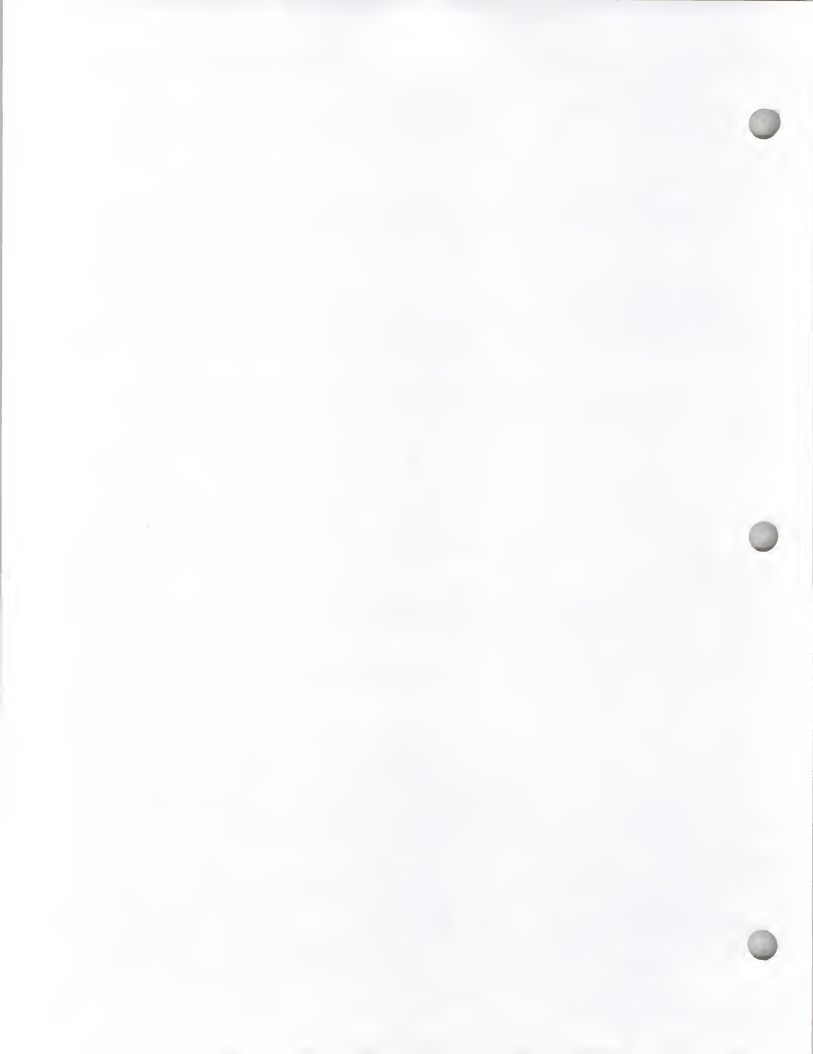
Retix has approximately 45,000 internetworking systems installed worldwide, and there are currently 250 companies who have licensed their OSI technology.

Industry Markets

Retix' 1992 revenue was derived from OEMs, the federal government, and corporate end-users.

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 - ISO Distributed Transaction Processing (DTP) Service Elements
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- Retix has announced contracts wins from the U.S. Air Force's Standard Multiuser Small Computer Requirements Contract (SMSCRC) and Desktop III Contract. Retix has also been selected by prime contractor Electronic Data Systems (EDS) to provide GOSIP products for the U.S. Army Information Systems' Small Multiuser Computer (SMC) contract.
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Internetworking Products:

Retix is also a supplier of internetworking devices, including bridges, bridge/routers, and network management systems.

- Network management products include 5025 Network Management Center and 5010 Network Management Center.

Clients

Customers include manufacturers of computer and communications equipment, systems integrators, value-added resellers, and large end-users with a need to interconnect computers, devices, and local- or wide-area networks.

Retix has approximately 45,000 internetworking systems installed worldwide, and there are currently 250 companies who have licensed their OSI technology.

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COMPANY PROFILE

RETIX

2401 Colorado Avenue
Santa Monica, CA 90404-3563
(213) 828-3400

Steve Frankel, Chairman, President,
and CEO
Private Corporation
Total Employees: 423 (6/91)
Total Revenue, Fiscal Year End
12/31/90: \$52,400,000

The Company

Retix, founded in 1985, designs, manufactures, and markets systems software products based on international Open System Interconnect (OSI) networking standards.

- Customers include manufacturers of computer and communications equipment, systems integrators, value-added resellers, and large end users with a need to interconnect computers, devices, and local- or wide-area networks.
- Initial financing for the company was provided by employees and private investors. Three additional financings were subsequently completed with U.S. and European venture capital investors, which include Bigler/Crossroads, First Venture Capital Investments, Fleming Ventures, Ltd, Hancock Venture Partners, Menlo Ventures, Montgomery Securities, Sevin Rosen Management Company, Philadelphia Ventures, and European corporate investors.

Retix' 1990 revenue reached an estimated \$52.4 million, a 50% increase over 1989 revenue of \$35 million.

- The company has operated profitably since 1986.
- A five-year revenue summary follows:

**RETIX
FIVE-YEAR REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR				
	1990	1989	1988	1987	1986
Revenue	\$52.4	\$35.9	\$27.2	\$13.6	\$3.7
• Percent increase from previous year	50%	32%	100%	268%	N/A

Key Products and Services

Approximately 50% of 1990 revenue was derived from Retix' OSI Technology and End User products. The remaining 50% of revenue was derived from internetworking devices.

Retix is currently organized into three product units:

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- OSI End User Products
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 - OSI Transport Protocol (Classes 0, 2, and 4)
 - ISO Connectionless Network Protocol
 - Subnetwork Dependent Convergence Function for IP to X.25
 - ISO End System to Intermediate System Routing Exchange Protocol

- CCITT X.25 Packet Level Protocol
- CCITT X.25 Link Access Protocol B
- OSI Logical Link Control (Classes 1,2, and 3)
- Planned Retix OSI portable software products include:
 - ISO Remote Data Base Access (RDA) Protocol
 - ISO Distributed Transaction Processing (DTP) Service Elements
 - ISO Commitment, Concurrency, and Recovery (CCR) Service Elements
 - Intermediate System to Intermediate System Routing Exchange Protocol

OSI End User Products:

To take advantage of end user movements to OSI in some specific markets, and for some specific applications, Retix has developed "shrink-wrapped" end user OSI products.

- In the federal government, the U.S. Government OSI Profile (GOSIP) mandate has gone into effect, requiring all government agencies to procure OSI-based networking products.
 - Retix has developed a complete line of GOSIP-compliant products for OSI applications such as X.400 Message Handling System, X.500, VT (Virtual Terminal) for UNIX and DOS, and FTAM (File Transfer, Access, and Management) to satisfy this requirement.
 - Retix has announced contract wins from the U.S. Air Force's Standard Multiuser Small Computer Requirements Contract (SMSCRC) and Desktop III Contract. Retix has also been selected by prime contractor Electronic Data Systems (EDS) to provide GOSIP products for the U.S. Army Information Systems' Small Multiuser Computer (SMC) contract.
- In the corporate environment, the OSI protocol X.400 is becoming the standard of choice for electronic mail interconnection. Retix has developed the OpenServer 400™ series, a PC LAN-based message server that runs on a standard 386 PC and allows proprietary E-mail systems to talk to each other, as well as to minicomputer- and mainframe-based E-mail systems and public and private E-mail networks.
- Retix has partnered with various E-mail vendors to ensure the development of gateways to link OpenServer with their E-mail packages. Partners include Microsoft, Novell, Data Access

Corporation, cc:Mail, DaVinci Systems, Eicon Technology, Oracle, U.S. Sprint, WordPerfect, Higgins Group, Symicron Computer Communications, and Hewlett-Packard.

Internetworking Products:

Retix is also a supplier of internetworking devices, including bridges, bridge/routers, and network management systems.

- Network management products include 5025 Network Management Center and 5010 Network Management Center.
- Bridging (Local) products include 4660 High Performance Local Bridge, 2200 Series Local Bridges, and 3660 Token Ring Local Bridge.
- Bridging (Remote) products include 4880 High Performance Remote Bridge, 4850 Remote Bridge, 4820 Remote Bridge, and 3880 Token Ring Remote Bridge.
- Routing (Local) products include 4760 Local Bridge/Router.
- Routing (Remote) products include 4942 Remote Bridge/Router and 4941 Remote Bridge/Router.

Industry Markets

Retix' 1990 revenue was derived from OEMs, the federal government, and corporate end users.

Geographic Markets

Approximately 40% of Retix' 1990 revenue was derived from the U.S. and 60% from international sources.

U.S. field sales offices are located in Dallas, Iselin (NJ), Reston (VA), San Jose (CA), and Washington, D.C. Additional facilities are located in Santa Monica and Chatsworth (CA).

European offices are located in Italy, France, Germany, and the U.K. Additional facilities are located in Ireland.

COMPANY HIGHLIGHT

REUTERS NORTH AMERICA

1700 Broadway
New York, NY 10019
(212) 582-4030

Glen Renfrew, Managing Director
Desmond Maberly, Chief Editor
North America
Division of Reuters Ltd.
Total Employees: 300
Total Revenue, Fiscal Year End
12/31/80: \$32,000,000*
Total Computer Services Revenue:
\$21,000,000*

PRINCIPAL BUSINESS

- Reuters North America (RNA) performs all news, wire, quotation, and dealer services in North America for the parent Reuters Ltd. of London. Begun in 1967 upon termination of news-gathering arrangements with Dow Jones and Associated Press, RNA provides information by printer/ticker and through interactive data bases.

SOURCES OF REVENUE

65% Processing Services (data base).
35% Printer/Ticker Services.

COMPETITORS

- Commodities and securities quotations: Bunker Ramo, GTE Information Systems, Quotron Systems.
- News Cables: Dow Jones, Associated Press, Commodity News.

PRODUCTS AND SERVICES

- RNA maintains data bases of international market, news, and contributed pricing information in the areas of foreign exchange, money market funds, commodities, securities, and mortgages.
 - Printer or ticker services provide continuous reporting of financial and news information. Offered are:
 - Reuter Canadian Financial Report.
 - Reuter Commodity Report.
 - Reuter Financial Report.
 - Reuter Grain and Livestock Report.
 - Reuter Metals Report.

*INPUT estimate

- . Reuter Money Report.
 - . Reuter Mixed Commodity Report.
 - . Reuter News Report.
- Interactive inquiry/response services from remote terminals include:
 - . Reuter Monitor Money Rates Service.
 - . Reuter Monitor U.S. Government Securities Service.
 - . Reuter Monitor Coins and Precious Metals Service.
 - . Reuter Monitor Non-Ferrous Metals Service.
 - . Reuter Monitor Commodity Service.
 - Grains and oilseeds.
 - Coffee, cocoa, and sugar.
 - Livestock.
 - . Reuter Monitor Securities Service.
- Other services include a news update for cable TV companies (Reuter News-View) and a communications service for electronic interbank trading (Reuter Money Dealing Service).
- The Reuter Monitor Service was introduced in 1973 with a foreign exchange module. Additional services including interbank money rates, equities, bonds, metals, and grains were subsequently added. Information available for inquiry is shown in the exhibit. There are approximately 1,500 users of the service in the U.S.
 - The original foreign exchange and money market modules continue to be the most heavily used. Called the Reuter Monitor Money Rate Service (RMMR), this information is used by most international banks, corporations, government agencies, and central banks.
 - RMMR carries quotations on 50 currencies, 13 Eurocurrencies, 18 domestic money markets, gold and silver bullion, and U.S. government securities.
 - Bid and offer prices for these currencies are contributed via the purchase of information "pages" by commercial banks, central banks, and government agencies. Contributors and large corporations use this information in buying and selling currency and other quoted commodities.
 - The news option accesses news stories impacting money rates.
 - The money graph option accesses summary graphs showing information on trade and balance of payments, consumer prices, money supply, reserve and discount rates, interest rates, and weekly monetary statistics.

EXHIBIT

REUTER QUOTATION AND NEWS SERVICES

DATA BASES	
OPERATING ENVIRONMENT	
● DEC PDP-11/70	
NEWS SERVICES	
● GRAINS AND OILSEEDS	
– WHEAT	– SOYBEAN
– CORN	– SOYBEAN OIL
● LIVESTOCK	
– CATTLE	– PORK BELLY
– HOGS	– FEEDER CATTLE
● SOFT COMMODITIES	
– SUGAR	– COCOA
– COFFEE	– COTTON
● ENERGY	
– HEATING OIL	– GAS OIL
● BUSINESS/MARKET	
– NYSE	– NY BOND
– AMEX	– WALL STREET
– COMMODITY EXCHANGES	
● METALS	
– SILVER	– LEAD
– GOLD	– ZINC
– COPPER	– TIN
– PLATINUM	– NICKEL/ALUMINUM
● MONEY	
– NY MONEY MARKET	
– CANADIAN BANKS	
– INTEREST RATES	
– FOREIGN EXCHANGE	
● REUTER NEWS-VIEW	
– GENERAL	– FEATURE
– FINANCIAL	
● MONEY MARKET STATISTICS	
– NY MONEY RATES	
– U.S. COMMERCIAL PAPER	
– BANK PRIME RATES	
– INTERNATIONAL BULLION PRICES	
– CURRENCY FIXINGS	
– EUROBOND INDICES	
– MONEY SUPPLY	

DATA BASES	
QUOTATION SERVICES	
● INTERNATIONAL MONEY FOREIGN EXCHANGE RATES*	
● NORTH AMERICAN FOREIGN EXCHANGE RATES*	
● ARBITRAGE MARKETS	
– COCOA	– SILVER
– COPPER	– SUGAR
– COFFEE	
● U.S. GOVERNMENT SECURITIES	
– NOTES/BONDS	– AGENCIES
– FEDERAL FUNDS	
● MORTGAGE INDEX*	
● LONDON METALS	
– COPPER	– LEAD
– TIN	– ZINC
– SILVER	– ALUMINUM
● LONDON/PARIS SOFT COMMODITIES	
– COCOA	– COFFEE
– SUGAR	– SOYBEANS
– RUBBER	
● COINS/PRECIOUS METALS NORTH AMERICA AND INTERNATIONAL*	
● NON-FERROUS METALS	
● GRAIN AND OILSEEDS	
– WHEAT	– OATS
– CORN	– SOYBEAN
– BARLEY	– FLAX
– POTATOES	
● LIVESTOCK	
– CATTLE	– HOGS
– PORK	– EGGS
● SOFT COMMODITIES NEW YORK	
● WOOD MARKET	
● COTTON AND RICE	
● NORTH AMERICAN METALS	
– SILVER	– PLATINUM
– GOLD	– PALADIUM
● SECURITIES AND OPTIONS	
– NYSE	– CBOE
– AMEX	– OVER-THE-COUNTER
● MOCATTA COMMODITY OPTIONS*	
– COINS	– GOLD
– COPPER	– SILVER
– KRUGERRAND	– MAPLE LEAF

* CONTRIBUTED INFORMATION

REUTERS NORTH AMERICA

- RNA added interactive access to its commodities and securities data bases on the Reuter Monitor in the Manhattan area in 1976. Services were broadened to other U.S. cities in 1978. Services available include the following:
 - The Reuter Monitor Commodity Services provide market reports, quotations, and news on grains and oilseeds, livestock, and coffee, cocoa, and sugar. Quotes from the major domestic and international commodity exchanges are included.
 - The Reuter Monitor Securities Service provides stock quotations from all major stock exchanges in the U.S. and Europe. Options and over-the-counter quotations are included.
- In February 1981, RNA began offering the Reuter Money Dealing Service to large banks. The Dealing Service, used with the Reuter Monitor Money Rates Service, allows purchasers of currencies or money market funds to communicate directly with the selling parties and arrange transactions. RNA provides the communications facility only. There are currently 200 member banks worldwide.

INDUSTRY MARKETS

- RNA clients are primarily from the financial community. Large corporations, commodity brokers, and government agencies are also clients.

GEOGRAPHIC MARKETS

- RNA services are most heavily used in the large eastern and western banking centers. Commodity and security quotation services are offered primarily in the New York area.
- RNA maintains offices in Chicago, Dallas, Ft. Lauderdale, Kansas City, New York, Los Angeles, San Francisco, Montreal, Toronto, and Vancouver.

COMPUTER HARDWARE

- RNA operates its main data center in New York, from which international information is sent via satellite from data centers in London, Amsterdam, Frankfurt, Paris, Zurich, and Hong Kong.
- RNA operates DEC PDP-11/70 computers in its data centers and major network nodes.
- The Reuter Monitor is manufactured by IDR Inc., a wholly owned subsidiary. The Monitor can access both Reuters' and proprietary data bases.
 - The terminal operates with a one-way coaxial cable. Data in packets of 32 characters is transmitted continuously through the cable. When the desired information is sent, the terminal picks it up and displays it.

REUTERS NORTH AMERICA

- The IDR system has been installed in New York City since 1976 on the Manhattan Cable Television Network and a special cable provided by the New York Telephone Company. Bankers, brokers, and corporations in Manhattan use the cables with the Reuter Monitor Service.
- IDR is developing a mass-market terminal for use by all cable network subscribers to allow access to data base information.
- Monitor users outside New York are serviced by standard two-way telephone lines.



COMPANY PROFILE

REYNOLDS AND REYNOLDS COMPANY

115 South Ludlow
Dayton, OH 45401
(513) 443-2000

Terry D. Carder, Chairman
David R. Holmes, President and CEO
Public Corporation, NYSE
Total Employees: 5,035 (9/89)
Total Revenue, Fiscal Year End
9/30/89: \$602,146,000
Computer Systems Revenue:
\$240,553,000

The Company

The Reynolds and Reynolds Company (Reynolds) was founded in 1866 to manufacture and distribute standard and custom business forms. Reynolds is currently organized in two operating divisions as follows:

- The Business Forms Division, with approximately 2,700 employees, manufactures and distributes printed business forms and systems, custom continuous and snap-out forms, computer stock forms, and forms management services to automotive, professional, medical, and general business markets.
- The Automotive/Automotive-Related unit supplies business forms and manual systems to automobile and truck dealerships. It also supplies the related automotive market, which includes tire dealers, repair garages, auto parts firms, body repair shops, and recreational vehicle dealerships.
- The General Printing unit supplies printed forms, manual systems, custom continuous and snap-out forms, and forms management services to professional, medical, and general business markets. This unit includes the operations of the Arnold Corporation, which was acquired by Reynolds in May 1986.
- Wilmer Service Line is a wholesale operation that markets one-write pegboard accounting systems and loose-leafed forms through a nationwide network of forms distributors and office product dealers.
- The Computer Systems Division (information services unit), with approximately 2,080 employees, provides turnkey systems and associated support services to automobile dealerships and turnkey systems and software products to the medical industry.

- The Automotive Computer Systems and Services unit markets turnkey systems to automobile dealers, as well as computer-related products and support services to automobile manufacturers, distributors, and importers. Client educational services are also provided through this unit.
- The International unit markets Reynolds' products and services outside the U.S. This unit includes the operations of Beri S.A. (acquired from Peugeot in August 1987), a provider of processing services and systems to automobile dealers in France.
- Medical Systems, with approximately 260 employees, offers turnkey systems for medical practice management to physician practices.
 - National Medical Computer Services, Inc. (acquired in December 1986) is a wholly owned subsidiary that offers computer systems primarily to hospital-based physicians such as radiologists, anesthesiologists, and pathologists.
- Reyna Financial Corporation is wholly owned financial subsidiary that provides lease financing for products marketed by the Computer Systems Division. During fiscal 1989, Reynolds implemented a change in its accounting procedures and now consolidates Reyna's financials with those of Reynolds. Results prior to fiscal 1989 have been restated to reflect the accounting change.

Total fiscal 1989 revenue reached \$602.1 million, a 2% decrease from fiscal 1988 revenue of \$613.9 million.

- After eliminating \$21.8 million in fiscal 1988 sales from divested non-strategic operations, revenue from continuing operations actually increased 2% during fiscal 1989.
- Net income rose 4%, from \$26.1 million in fiscal 1988 to nearly \$27.2 million in fiscal 1989. Excluding the \$8 million positive effect of an accounting change in fiscal 1988, net income for fiscal 1989 increased 51% over fiscal 1988 levels.
- In the five-year summary that follows, financials have been restated to reflect the adoption of SFAS No. 94 (Accounting for All Majority-Owned Subsidiaries) and the consolidation of Reyna's results with those of Reynolds:

**REYNOLDS AND REYNOLDS COMPANY
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	9/89	9/88	9/87	9/86	9/85
Revenue	\$602,146	\$613,947	\$573,861	\$414,979	\$333,785
• Percent increase from previous year	(2%)	7%	38%	24%	N/A
Income before taxes	\$46,102	\$29,496	\$40,686	\$43,632	\$39,105
• Percent increase (decrease) from previous year	56%	(a) (28%)	(a) (7%)	12%	N/A
Net income	\$27,244	\$26,092	\$21,221	\$23,856	\$21,072
• Percent increase (decrease) from previous year	4%	(b) 23%	(11%)	13%	23%
Earnings per share	\$2.53	\$2.43	\$1.91	\$2.44	\$2.24
• Percent increase (decrease) from previous year	4%	(b) 27%	(22%)	9%	24%

(a) Includes gains on the sale of assets of approximately \$9 million in fiscal 1988 and \$2.3 million in fiscal 1987.

(b) Includes an \$8 million or \$0.75 per share positive effect of revaluing deferred income taxes.

A five-year financial summary by business segment, excluding the results of Reyna, follows:

**REYNOLDS AND REYNOLDS COMPANY
FIVE-YEAR SUMMARY BY BUSINESS SEGMENT
(\$ thousands)**

ITEM	FISCAL YEAR				
	9/89	9/88	9/87	9/86	9/85
Computer Systems Products					
• Revenue	\$240,553	\$248,009	\$229,725	\$201,898	\$188,598
• Operating income (loss)	\$29,501	\$(107)	\$14,709	\$18,893	\$14,941
Business Forms					
• Revenue	\$348,907	\$352,102	\$332,975	\$202,113	\$136,739
• Operating income	\$19,559	\$26,047	\$26,307	\$23,979	\$19,742

Computer Systems products and services revenue increased 5% to \$240.5 million in fiscal 1989, after eliminating \$19.4 million of fiscal 1988 sales from non-strategic businesses sold during 1988.

- The increase was primarily the result of increases in-house computer system sales for dealerships, maintenance and support revenues, and medical computer systems sales.
- In-house dealership systems sales increased primarily as a result of increased volume of higher-priced ERA systems. While the number of VIM/NET[®] systems sold increased, VIM/NET revenues decreased because of lower average system prices. Lower system prices resulted from the conversion of batch data processing customers to lower-end in-house systems as the U.S. batch operations were closed.
- Software support revenue grew rapidly because of the higher number of software applications sold with ERA systems and the high number of VIM/NET systems sold.
- Medical computer systems sales increased 23% during fiscal 1989.

Significant activities during fiscal 1989 include the following:

- Reynolds sold a record number of ERA[®] in-house systems for automobile dealers
- The company added Volvo, Jeep/Eagle, Mercedes-Benz, and Nissan to the growing number of automobile manufacturers that used Reynolds electronic parts cataloging systems.
- Reynolds signed a \$25 million, three-year contract with Insurance Services Office, Inc. for business forms and forms management services, as well as similar multi-million dollar contracts with General Dynamics and General Electric.
- Reynolds developed and implemented a plan for General Printing which consolidated manufacturing facilities, upgraded equipment, and installed systems to improve productivity, reduce costs, and respond to customer needs.
- During the year, the profitability and market position of National Medical Computer Services was significantly improved.
- Gains were made in the in-house automotive systems market in France.

- Reynolds increased productivity company wide, while reducing selling, general, and administrative costs by \$17.8 million from fiscal 1988 levels.

Key Products and Services

The majority of Reynold's fiscal 1989 Computer Systems revenue was derived from turnkey systems and associated support services provided to automobile dealerships and medical practices. A small percentage was derived from software for medical practices.

Reynolds has installed more than 17,000 turnkey systems in dealerships. The company's current product line, the ERA^R computer system, introduced in early 1987, is based on a Motorola 68020 32-bit microprocessor.

- ERA provides totally integrated data base applications for sales, parts, service, and business office departments.
- Reynolds currently offers two ERA systems:
 - ERA 96000 is designed for multi-franchise, multi-store dealer corporations and megadealerships requiring 200 or more workstations.
 - ERA 48000 is targeted to dealers requiring from as few as 8 user workstations to as many as 48 workstations.

Reynolds also continues to market and support the VIM/NET^R5 product line which is based on the NCR Tower minicomputer.

- The systems provide auto dealers with applications for accounting, payroll, inventory management, invoicing, service merchandising, vehicle merchandising, and leasing functions.
- All VIM/NET 5 computers can be linked through a local area network to share and access data for total dealership integration.
- VIM/NET 5 systems include the following:
 - VIM/NET 5, Model 2024 is targeted to small dealerships entering into in-house computing or as an addition to an expanding system. The system can support one to eight terminal ports.
 - VIM/NET 5, Model 24000 is targeted to medium-sized dealerships requiring more disk space and up to 24 user workstations.

- VIM/NET 5, Model 48000, targeted to very large dealerships, can operate up to 48 workstations as a standalone system or 128 workstations in a networked configuration.

Reynolds also offers the following products to dealerships:

- The executive Data Management System, introduced in 1986, is a software product that permits preformatted and custom report generation and interfaces to off-the-shelf software packages for spreadsheet, word processing, data management, and financial analysis capabilities.
- Reynolds markets Bell and Howell's IDB2000 electronic parts catalog to auto dealers nationwide under the name PartsVision[®] electronic parts catalog system. The catalog currently stores 10 years of parts diagrams and text on magnetic and/or CD-ROM disks for General Motors dealers in the U.S. and Canada. Similar systems for Chrysler dealers (called "PAIS"), Jeep Eagle, Mercedes-Benz, and Honda/Acura dealers are also available.

Reynolds' Manufacturer Services Group (within the Automotive Computer Systems and Services unit) was established in early 1986 to provide products and services directly to automobile manufacturers, importers, and distributors.

- Reynolds provides the standalone Dealer Communications System (DCS), which includes a unique communications processor for direct communications between auto dealers and manufacturers.
- Reynolds was named exclusive supplier of dealer communications systems for Isuzu and Saab dealers.
- Reynolds announced the availability of a system to provide Chevrolet dealers with direct access to Chevrolet's Total Information Management System (TIMS).
- Reynolds announced a new DCS for Hyundai and Subaru dealers.
- Reynolds announced the industry's first "partial" DCS approved by General Motors, Ford, and Isuzu.
- Reynolds provides manufacturers with support services, including training and education, hardware installation, maintenance, and software services.

Turnkey system service and support is provided by approximately 650 service personnel located in four regional and 84 local service offices. Regional educational centers provide specialized customer training, advanced seminars in accounting and parts and service merchandising, and executive and management information seminars.

Products/services provided to the medical industry include the following:

- The Medical Practice Management System (MPMS), announced in 1984, is an NCR Tower-based turnkey system targeted to office-based group practices. System features include automatic preparation of insurance forms and fee slips, complete accounts receivable aging, and management reporting.
- Through National Medical Computer Services, Reynolds provides the following application software products:
 - Physician's Account Receivable (PAR) is a billing and accounts receivable management system for hospital-based physician groups and billing service bureaus. PAR operates on IBM AS/400 and System/36 computers.
 - The PAR/PM (Physician's Accounts Receivable and Practice Management) system is designed for office-based physician groups. In addition to performing billing and accounts receivable management functions, PAR/PM offers other practice management features such as patient appointment scheduling and medical history recordkeeping. PAR/PM operates on the IBM AS/400.
 - The Automated Radiology Management (ARM) system automates the administrative, film archiving, and clerical tasks performed by free-standing diagnostic imaging centers and hospital radiology departments. ARM operates on the IBM PS/2, Model 80, but can interface with the PAR system and hospital information systems.
 - National Medical Computer Services has installed nearly 1,400 systems and has a current customer base of 1,000.

Reynolds sells computers/terminals/peripherals manufactured by IBM, NCR, Texas Instruments, and Televideo.

Industry Markets

The majority of Reynolds' Computer Systems revenue is derived from automotive dealerships and automobile manufacturers. The remainder of revenue is derived from medical practices.

Auto manufacturing clients include Chrysler, General Motors, Ford/Lincoln Mercury, Mercedes-Benz, Nissan, Honda/Acura, Volvo, Saab, and Isuzu.

Geographic Markets

Approximately 89% of Reynolds' fiscal 1989 revenue was derived from the U.S. and 11% from its foreign subsidiaries.

Foreign subsidiaries' net sales and net income were \$68.2 million and \$2.5 million in fiscal 1989, compared to \$61.8 million and \$2.9 million in fiscal 1988, and \$38.3 million and \$383,000 in fiscal 1987, respectively.

Reynolds operates nearly 200 sales offices worldwide. International subsidiaries are located in Canada, France, and Australia.

Computer Hardware

Reynolds uses equipment from various manufacturers, including IBM, NCR, Televideo, Texas Instruments, and Bell and Howell in support of its processing services.

COMPANY PROFILE

REYNOLDS AND REYNOLDS COMPANY

115 South Ludlow
Dayton, OH 45401
(513) 443-2000

Terry D. Carder, Chairman
David R. Holmes, President and CEO
Public Corporation, NYSE
Total Employees: 4,976
Total Revenue, Fiscal Year End
9/30/88: \$600,111,000
Information Services Revenue:
\$248,009,000

The Company

The Reynolds and Reynolds Company (Reynolds) was founded in 1866 to manufacture and distribute standard and custom business forms. Reynolds currently operates in two business segments as follows:

- The Business Forms Division manufactures and distributes printed business forms and systems, custom continuous and snap out forms, computer stock forms, and forms management services to automotive, professional, medical, and general business markets.
- The Automotive/Automotive-Related unit supplies business forms and manual systems to automobile, truck, and recreational vehicle dealerships. It also supplies the related automotive market, which includes tire dealers, repair garages, auto parts firms, and body repair shops.
- The General Printing unit supplies printed forms, manual systems, custom continuous and snap out forms, and forms management services to professional, medical, and general business markets. This unit includes the operations of The Arnold Corporation, which was acquired by Reynolds in January 1986.
- Wilmer Service Line is a wholesale operation that markets one-write pegboard accounting systems through a nationwide network of forms distributors.
- The Computer Systems Division (information services unit) provides turnkey systems, processing services, and associated support services to automobile dealerships and turnkey systems and software products to the medical industry.

- The Automotive Computer Systems and Services unit markets turnkey systems and processing services to automobile dealers, as well as computer-related products and support services to automobile manufacturers, distributors, and importers. Client educational services are also provided through this unit.
- The International unit markets Reynolds' products and services outside the U.S. This unit includes the operations of Beri S.A. (acquired from Peugeot in August 1987), a provider of processing services and systems to automobile dealers in France.
- Medical Systems offers turnkey systems for medical practice management to physician practices.
 - National Medical Computer Services, Inc. (acquired in December 1986) is a wholly owned subsidiary that offers computer systems primarily to hospital-based physicians such as radiologists, anesthesiologists, and pathologists.
- Reyna Financial Corporation is a nonconsolidated, wholly owned financial subsidiary that provides lease financing for products marketed by the Computer Systems Division.

During 1988, Reynolds streamlined operations to improve efficiency and increase profitability. The company realigned its Computer Systems Division, resulting in the reduction of about 250 employees nationwide. Reynolds sold several non-strategic businesses to concentrate on its core business of providing products and services to automobile dealers. Businesses divested include the following:

- In September 1988, Reynolds sold its Accutax Systems tax processing unit to CCH Computax, Inc.
 - During fiscal 1988 this unit had net sales of about \$15 million and total assets of about \$4 million.
 - The sale resulted in an after income tax gain of about \$5.9 million or \$0.55 per share.
- In May 1988, Reynolds sold its Direct Marketing unit to its management team. Terms of the sale were not disclosed. This unit marketed computer peripherals, supplies, and accessories through catalogs and telemarketing.

- In February 1988, Reynolds announced the sale of its South African subsidiary to Computermatic Holdings Ltd. The sale price was equal to the asset value of the operations.
- During fiscal 1988 Reynolds also disposed of a specialty printing operation.

Fiscal 1988 revenue reached \$600.1 million, a 7% increase over fiscal 1987 revenue of \$562.7 million. Net income rose 23%, from \$21.2 million in fiscal 1987 to nearly \$26.1 million in fiscal 1988. A five-year financial summary follows:

**REYNOLDS AND REYNOLDS COMPANY
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	9/88	9/87	9/86	9/85	9/84
Revenue	\$600,111	\$562,700	\$404,011	\$325,337	\$289,808
• Percent increase from previous year	7%	39%	24%	12%	15%
Income before taxes	\$27,458	\$39,107	\$41,528	\$37,702	\$29,707
• Percent increase (decrease) from previous year	(a) (30%)	(a) (6%)	10%	27%	50%
Net income	\$26,092	\$21,221	\$23,856	\$21,072	\$17,146
• Percent increase (decrease) from previous year	(b) 23%	(b) (11%)	13%	23%	44%
Earnings per share	\$2.43	\$1.91	\$2.44	\$2.24	\$1.81
• Percent increase (decrease) from previous year	(b) 27%	(b) (22%)	9%	24%	44%

- (a) Includes gains on the sale of assets of approximately \$9 million in fiscal 1988 and \$2.3 million in fiscal 1987.
- (b) Includes a \$8 million or \$0.75 per share positive effect of revaluing deferred income taxes.

A five-year financial summary by business segment follows:

**REYNOLDS AND REYNOLDS COMPANY
FIVE-YEAR SUMMARY BY BUSINESS SEGMENT
(\$ thousands)**

ITEM	FISCAL YEAR				
	9/88	9/87	9/86	9/85	9/84
Computer Systems					
• Revenue	\$248,009	\$229,725	\$201,898	\$188,598	\$161,524
• Operating income (loss)	\$(107)	\$14,709	\$18,893	\$14,941	\$10,426
Business Forms					
• Revenue	\$352,102	\$332,975	\$202,113	\$136,739	\$128,284
• Operating income	\$26,047	\$26,307	\$23,979	\$19,742	\$20,903

Sales of the Computer Systems segment increased 8% during fiscal 1988, primarily as a result of the 1987 acquisition of Beri. Sales gains also resulted from continued high volume of sales of turnkey systems and terminals and the resulting increase in maintenance and support revenues.

- Gross profit margins were 35.4% in fiscal 1988, 44% in fiscal 1987, and 45.1% in fiscal 1986. The decline in 1988 reflects competitive pricing in the domestic automobile dealer market, development and support costs for newer products significantly exceeding expectations, substantial severance costs from staff reductions, production difficulties of implementing the Tax Reform Act of 1986 by the company's tax processing unit, and the impacts of Beri and NMCS which have lower gross profit margins than the company's domestic automobile dealer market.

Sales of the Business Forms segment rose 6% during fiscal 1988, reflecting modest price and volume increases.

- Gross profit margins declined to 39.1% in fiscal 1988, compared to 40.7% in fiscal 1987 and 49.1% in fiscal 1986. Declines were attributed to Arnold's general business forms market which has lower gross profit margins than Reynolds' traditional standardized product lines.

Key Products and Services

INPUT estimated that in fiscal 1988, approximately 66% of Reynolds' Computer Systems segment revenue was derived from turnkey systems sales and support, 7% from processing services, and the remainder from terminal sales.

Reynolds has installed more than 17,000 turnkey systems in dealerships. The company's current product line, ERATM, introduced in early 1987, is based on a Motorola 68020 32-bit microprocessor.

- ERA provides integrated data base applications for Sales, Parts, Service, and Business Office departments.
- Reynolds currently offers three ERA systems as follows:
 - ERA 96000 is designed for multi-franchise, multi-store dealer corporations and megadealerships requiring 200 or more workstations.
 - ERA 64000 is targeted to large to very large dealers requiring up to 48 user workstations.
 - ERA 24000 is targeted to dealers requiring up to 16 user workstations.

Reynolds also continues to market and support the VIM/NET^{RS} product line which is based on the NCR Tower minicomputer.

- The systems provide auto dealers with applications for accounting, payroll, inventory management, invoicing, service merchandising, vehicle merchandising, and leasing functions.
- All VIM/NET 5 computers can be linked through a local area network to share and access data for total dealership integration.
- VIM/NET 5 systems include the following:
 - VIM/NET 5, Model 2000 is targeted to small dealerships entering into in-house computing or as an addition to an expanding system. The system can support one to eight terminal ports.
 - SERVICE/NETTM is a version of VIM/NET 5, Model 2000 for dealership service departments that provides service merchandising and appointment scheduling applications.
 - VIM/NET5, Model 32000, targeted to large dealerships, can support up to 24 workstations as a standalone system or 120 workstations in a networked configuration.

- VIM/NET 5, Model 48000, targeted to very large dealerships, can operate up to 32 workstations as a standalone system or 128 workstations in a networked configuration.

Reynolds also offers the following products to dealerships:

- The executive Data Management System, introduced in 1986, is a software product that permits preformatted and custom report generation and interfaces to off-the-shelf software packages for spreadsheet, word processing, data management, and financial analysis capabilities.
- Reynolds markets Bell and Howell's IDB2000 electronic parts catalog to auto dealers nationwide under the name PartsVision™. The catalog currently stores 10 years of parts diagrams and text on magnetic and/or CD-ROM disks for General Motors dealers in the U.S. and Canada. Similar systems for Chrysler dealers (called "PAIS") and Honda/Acura dealers are also available.
- Reynolds also offers an IBM PC-based system to dealers for finance and insurance applications.

Reynolds' Manufacturer Services Group (within the Automotive Computer Systems and Services unit) was established in early 1986 to provide products and services directly to automobile manufacturers, importers, and distributors.

- Reynolds provides standalone communications processors for direct communications between auto dealers and manufacturers.
- Reynolds also provides dealer communication systems (DCS) that integrate information between dealer sales, parts, service, and office system departments.
 - Reynolds was named exclusive supplier of dealer communications systems for Isuzu and Saab dealers.
 - Reynolds announced the availability of a system to provide Chevrolet dealers with direct access to Chevrolet's Total Information Management System (TIMS).
 - Reynolds announced a dealer communications system for Volvo.

- Reynolds announced the industry's first "partial" DCS approved by General Motors' Car and Light Truck divisions.
- Reynolds provides manufacturers with support services, including training and education, hardware installation, maintenance, and software services.

Turnkey system service and support is provided by over 500 service personnel located in three regional and 89 local service offices. Regional educational centers provide specialized customer training, advanced seminars in accounting and parts and service merchandising, and executive and management information seminars.

Products/services provided to the medical industry include the following:

- The Medical Practice Management System (MPMS), announced in 1984, is an NCR Tower-based turnkey system targeted to office-based group practices. System features include automatic preparation of insurance forms and fee slips, complete accounts receivable aging, and management reporting.
- Through National Medical Computer Services, Reynolds provides the following application software products:
 - Physician's Account Receivable (PAR) is an accounts receivable and billing system for hospital-based physicians. PAR is designed for IBM AS 400 and System 36 computers. There are currently over 1,200 installations for 775 customers.
 - Physician's Accounts Receivable/Practice Management (PAR/PM) is designed for primary care physicians with recurring patient bases. PAR/PM runs on IBM System 36 computers.
 - Physician's Accounts Receivable/Automated Radiology Management (PAR/ARM) is designed for hospital radiology departments and free-standing radiology centers. PAR/ARM runs on IBM PC AT and compatible microcomputers.

Reynolds sells computers/terminals/peripherals manufactured by IBM, NCR, Texas Instruments, and Televideo.

Industry Markets

The majority of Reynolds' Computer Systems revenue is derived from automotive dealerships and automobile manufacturers. The remainder of revenue is derived from medical practices.

Auto manufacturing clients include American Motors, Chrysler, General Motors, Ford/Lincoln Mercury, Mercedes-Benz, Nissan, Honda/Acura, Volvo, Saab, and Isuzu.

Geographic Markets

Approximately 90% of Reynolds' fiscal 1988 revenue was derived from the U.S. and 10% from its foreign subsidiaries.

Foreign subsidiaries' net sales and net income (loss) were \$61.8 million and \$2.9 million in fiscal 1988, compared to \$38.3 million and \$383,000 in fiscal 1987, and \$35.2 million and (\$1.6 million) in fiscal 1986, respectively.

Reynolds operates nearly 200 sales offices worldwide. International subsidiaries are located in Canada, France, and Australia.

Computer Hardware

Regional computer centers are located in Dayton (OH), Chicago (IL), and Brampton (Ontario, Canada). Reynolds uses equipment from various manufacturers, including IBM and NCR, in support of its processing services.

COMPANY PROFILE

REYNOLDS AND REYNOLDS
COMPANY
115 S. Ludlow
Dayton, OH 45401
(513) 443-2000

Terry D. Carder, Chairman and CEO
David R. Holmes, President and COO
Public Corporation, OTC
Total Employees: 5,704
Total Revenue, Fiscal Year End
9/30/87: \$562,700,000
Information Systems Revenue:
\$229,725

THE COMPANY

- The Reynolds and Reynolds Company (Reynolds) was founded in 1866 in Dayton (OH) to manufacture and distribute standard and custom business forms. In addition to manual business forms, Reynolds now provides batch and remote computing services, turnkey systems, and microprocessor-based terminals primarily to automobile dealerships. Products and services are also marketed to accountants, medical practices, and hospital-based physicians.
- During 1986 and 1987 Reynolds expanded its operations with the following acquisitions.
 - In January 1986 Reynolds completed the purchase of DYATRON's Australian automotive turnkey system subsidiary.
 - In May 1986 Reynolds acquired The Arnold Corporation of Akron (OH) for \$110 million, which included the retirement of Arnold's \$43.2 million in long-term debt.
 - Arnold, with 1,400 employees and 1985 sales of \$173 million, provides custom continuous and snapout forms, computer stock forms, specialty printed and direct mail products, and forms management services to the financial, medical, sports, entertainment, consumer, general business, and industrial markets.
 - The operations of Arnold (now a wholly-owned subsidiary) have been merged with Reynolds' Business Systems Division to form the Business Forms Division.
 - In December 1986 Reynolds acquired National Medical Computer Services, Inc. (NMCS) of San Diego (CA). Terms of the purchase were not disclosed.
 - NMCS, with annual sales of about \$17 million, provides application software products to hospital-based physicians.

REYNOLDS AND REYNOLDS COMPANY

NMCS now operates as a wholly-owned subsidiary of Reynolds.

- In August 1987 Reynolds acquired the French operations of Beri S.A., a wholly-owned subsidiary of Peugeot S.A. that provides processing services and systems to automobile dealers in France.
- Fiscal 1987 revenue reached \$562.7 million, a 39% increase over fiscal 1986 revenue of \$404 million. Net income was \$21.2 million, an 11% decrease from income of \$23.9 million reported for fiscal 1986. A five-year financial summary follows:

REYNOLDS AND REYNOLDS FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/87	9/86	9/85	9/84	9/83
Revenue	\$ 562,700	\$ 404,011	\$ 325,337	\$ 289,808	\$ 52,233
• Percent increase from previous year	39%	24%	12%	15%	14%
Income before taxes	\$ 39,107	\$ 41,528	\$ 37,702	\$ 29,707	\$ 19,847
• Percent increase (decrease) from previous year	(6%)	10%	27%	50%	70%
Net income	\$ 21,221	\$ 23,856	\$ 21,072	\$ 17,146	\$ 11,939
• Percent increase (decrease) from previous year	(11%)	13%	23%	44%	52%
Earnings per share (a)	\$ 1.91	\$ 2.44	\$ 2.24	\$ 1.81	\$ 1.25
• Percent increase (decrease) from previous year	(22%)	9%	24%	44%	51%

(a) Restated to reflect a 2-for-1 stock split effective March 28, 1986.

- Reynolds markets its products and services in two major areas: computer systems (information services) and business forms. A five-year financial summary by business segment follows:

REYNOLDS AND REYNOLDS COMPANY

REYNOLDS AND REYNOLDS
FIVE-YEAR FINANCIAL SUMMARY BY BUSINESS SEGMENT
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/87	9/86	9/85	9/84	9/83
Computer Systems					
• Revenue (a)	\$ 229,725	\$ 201,898	\$ 188,598	\$ 161,524	\$ 140,726
• Operating income	\$ 14,709	\$ 18,893	\$ 14,941	\$ 10,426	\$ 1,868
Business Forms					
• Revenue	\$ 332,975	\$ 202,113	\$ 136,739	\$ 128,284	\$ 111,507
• Operating income	\$ 26,307	\$ 23,979	\$ 19,742	\$ 20,903	\$ 18,851

(a) Includes Medical Systems and Tax Systems operations.

- Sales of the Computer Systems segment increased 14% during fiscal 1987, primarily as a result of the higher average prices generated from the sale of Reynolds' new ERATM-turnkey systems and the National Medical Computer Services (NMCS) acquisition. Revenue increases in fiscal 1987 and 1986 were also attributed to increased sales of turnkey systems and terminals and the resulting increase in maintenance and support revenue.
 - Gross profit margins were 44% in fiscal 1987, 45.1% in fiscal 1986, and 41% in fiscal 1985. The decline in 1987 resulted primarily from the impact of NMCS which has lower gross profit margins than Reynolds.
- Sales of the Business Forms segment rose 65% during fiscal 1987 and 48% during fiscal 1986 primarily as a result of the acquisition of The Arnold Corporation. Higher volumes and moderate price increases for products sold to the automotive and related markets also contributed to revenue growth.
 - Gross profit margins were 40.7% in fiscal 1987, 49.1% in fiscal 1986, and 55.4% in fiscal 1985. Declines were directly attributed to Arnold's general business forms market which has lower gross profit margins than Reynolds' traditional product lines.
- Reynolds is currently organized into two operating divisions and one operating group as follows:
 - The Computer Systems Division provides turnkey systems, associated support services, and processing services.
 - The Automotive Computer Systems and Services unit markets turnkey systems and processing services to automobile dealers, as well as computer-related products and support services to automobile manufacturers, distributors, and importers. Client educational services are also provided through this unit.

REYNOLDS AND REYNOLDS COMPANY

- The International unit markets Reynolds' products and services outside the U.S.
- Medical Systems offers turnkey systems for medical practice management to physician practices.
 - National Medical Computer Services, Inc. is a wholly-owned subsidiary that offers computer systems primarily to hospital-based physicians such as radiologists, anesthesiologists, and pathologists.
- Tax Systems provides tax processing services to small- to medium-sized professional tax preparation firms.
- Reyna Financial Corporation is a nonconsolidated, wholly-owned financial subsidiary that provides lease financing for products marketed by the Computer Systems Division and the Professional Services Group.
- The Business Forms Division markets business forms and printed products.
 - The Automotive/Automotive Related unit supplies business forms and manual systems to automobile, truck, and recreational vehicle dealerships. It also supplies the related automotive market which includes tire dealers, repair garages, auto parts firms, and body repair shops.
 - The Business Forms Division supplies printed forms and manual systems to the healthcare industry and offers customized printing of business forms.
 - Wilmer Service Line is a wholesale operation that markets one-write pegboard accounting systems to retail office supply outlets.
 - Direct Marketing is a unit that markets computer peripherals, supplies, and accessories through catalogs and telemarketing.

KEY PRODUCTS AND SERVICES

- INPUT estimates that in fiscal 1987 approximately 65% of Reynolds' Computer Systems segment revenue was derived from turnkey systems sales and support, 10-15% from processing services, and the remainder from terminal sales.
- Reynolds' market has been in providing processing services and turnkey systems to automotive dealerships. Although this market still generates the majority of revenue, Reynolds has expanded its processing services to accountants and now also markets turnkey systems to medical practices.

- Reynolds has installed more than 17,000 turnkey systems in dealerships. The company's current product line, ERA^{T.M.}, introduced in early 1987, is based on a Motorola 68020 32-bit microprocessor.
 - ERA provides integrated data base applications for Sales, Parts, Service, and Business Office departments.
 - Reynolds currently offers three ERA systems as follows:
 - ERA 96000 is designed for multi-franchise, multi-store dealer corporations and megadealerships requiring 200 or more workstations.
 - ERA 48000 is targeted to large to very large dealers requiring up to 48 user workstations.
 - ERA 24000 is targeted to dealers requiring up to 16 user workstations.
- Reynolds also continues to market and support the VIM/NET[®] 5 product line which is based on the NCR Tower minicomputer.
 - The systems provide auto dealers with applications for accounting, payroll, inventory management, invoicing, service merchandising, vehicle merchandising, and leasing functions.
 - All VIM/NET 5 computers can be linked through a local area network to share and access data for total dealership integration.
 - VIM/NET 5 systems include the following:
 - VIM/NET 5, Model 2000, is targeted to small dealerships entering into in-house computing or as an addition to an expanding system. The system can support one to eight terminal ports.
 - SERVICE/NET^{T.M.} is a version of VIM/NET 5, Model 2000 for dealership service departments that provides service merchandising and appointment scheduling applications.
 - VIM/NET 5, Model 32000, targeted to large dealerships, can support up to 24 workstations as a standalone system or 120 workstations in a networked configuration.
 - VIM/NET 5, Model 48000, targeted to very large dealerships, can operate up to 32 workstations as a standalone system or 128 workstations in a networked configuration.
- Reynolds also offers the following products to dealerships.

REYNOLDS AND REYNOLDS COMPANY

- The Executive Data Management System, introduced in 1986, is a software product that permits pre-formatted and custom report generation, and interfaces to off-the-shelf software packages for spreadsheet, word processing, data management, and financial analysis capabilities.
- During 1987 Reynolds announced a marketing agreement with Bell and Howell whereby Reynolds will market Bell and Howell's IDB2000 electronic parts catalog to auto dealers nationwide under the name PartsVisionTM.
 - The IDB2000 system currently stores 10 years of General Motors parts diagrams and text on magnetic and/or CD-ROM disks. A similar system for Chrysler is in field test.
- Reynolds also offers an IBM PC-based system to dealers for finance and insurance applications.
- Reynolds' Manufacturer Services Group (within the Automotive Computer Systems and Services unit) was established in early 1986 to provide products and services directly to automobile manufacturers, importers, and distributors. Through this group Reynolds now provides manufacturers with:
 - Standalone communications processors for direct communications between auto dealers and manufacturers.
 - Dealer communication systems (DCS) which integrate information between dealer sales, parts, service, and office systems departments.
 - Reynolds was named exclusive supplier of dealer communications systems for Isuzu and SAAB dealers.
 - Reynolds announced the availability of a system to provide Chevrolet dealers with direct access to Chevrolet's Total Information Management System (TIMS).
 - Reynolds announced a dealer communications system for Volvo.
 - Interactive video information systems which combine videodisk, computer text, and computer graphics for dealer sales, training, and service applications.
 - Reynolds has developed a Customer Assistance System for Chrysler that permits car buyers to assemble the image of the vehicle they are interested in on a microcomputer.
 - A similar system is being developed for Dodge and Dodge Truck.
 - Centralized data collection systems that collect financial data from multiple dealerships nationwide.

REYNOLDS AND REYNOLDS COMPANY

- Support services, including training and education, hardware installation, maintenance, and software services.
- Turnkey system service and support is provided by 600 service personnel located in five regional and 80 local service offices. Regional educational centers provide specialized customer training, advanced seminars in accounting and parts and service merchandising, and executive and management information seminars.
- Reynolds provides processing services to vehicle dealerships as follows:
 - Timesharing services are provided via a national network of 60 VIM II computer sites. Applications available include accounting, payroll, and parts inventory control.
 - Batch processing services are also available for accounting, payroll, and parts inventory control.
- Products/services provided to other vertical markets include the following:
 - The Medical Practice Management System (MPMS), announced in 1984, is a NCR Tower-based turnkey system targeted to office-based group practices.
 - System features include automatic preparation of insurance forms and fee slips, complete accounts receivable aging, and management reporting.
 - Through National Medical Computer Services (acquired in December 1986) Reynolds also provides the following software products:
 - Physician's Accounts Receivable (PAR) is an accounts receivable and billing system for hospital-based physicians. PAR is designed for IBM System/36 computers. There are currently over 900 systems installed.
 - Physician's Accounts Receivable/Practice Management (PAR/PM) is designed for primary care physicians with recurring patient bases. PAR/PM runs on IBM System/36 computers.
 - Automated Radiology Management (ARM) is designed for hospital radiology departments and free-standing radiology centers. ARM runs on IBM AT and compatible microcomputers.
 - Batch and remote batch processing services are provided to professional accountants from its Walnut Creek (CA) and Atlanta data centers. Services include the following:
 - AccuTax is a year-end tax processing system.

REYNOLDS AND REYNOLDS COMPANY

- General ledger accounting services are offered from the Atlanta office.
- Other accounting services include preparation of employee payrolls, accounts receivable, billing services, and AccuPay, a quarterly tax preparation system.
- During fiscal 1987 Reynolds introduced REMOTEXPRESS®, a pilot project that allows professional tax preparers to transmit information via their microcomputers to Reynolds for processing.
- Reynolds sells terminals/peripherals manufactured by Texas Instruments, C. Itoh, and Genicom. The company also sells IBM PC/XT and AT microcomputers.

INDUSTRY MARKETS

- The majority of Reynolds' Computer Systems revenue is derived from automotive dealerships and automobile manufacturers. The remainder of revenue is derived from accountants and medical practices.
 - Auto manufacturing clients include American Motors, Chrysler, General Motors, Ford/Lincoln Mercury, Mercedes-Benz, and Nissan.

GEOGRAPHIC MARKETS

- Approximately 93% of Reynolds' fiscal 1987 revenue was derived from the U.S. and 7% from its foreign subsidiaries.
 - Foreign subsidiaries' net sales and net income (loss) were \$38.3 million and \$383,000 in fiscal 1987, compared to \$35.2 million and (\$1.6 million) in fiscal 1986, and \$27 million and (\$1.4 million) in fiscal 1985, respectively.
- Reynolds operates 142 sales offices in the U.S. and Canada. International subsidiaries are located in Australia, Canada, and France.

COMPUTER HARDWARE AND SOFTWARE

- Regional computer centers are located in Dayton, Chicago, Walnut Creek and Arcadia (CA), Atlanta, and Brampton (Ontario, Canada). Reynolds uses equipment from various manufacturers, including IBM and NCR.

COMPANY PROFILE

THE REYNOLDS AND REYNOLDS COMPANY

800 Germantown Street
Dayton, OH 45407
(513) 443-2000

Terry D. Carder, Chairman, President,
and CEO

Public Corporation, OTC

Total Employees: 3,701

Total Revenue, Fiscal Year End

9/30/85: \$325,337,000

Computer Systems Revenue:

\$188,598,000

THE COMPANY

- The Reynolds and Reynolds Company (Reynolds) was founded in 1866 in Dayton (OH) to manufacture and distribute standard and custom business forms. In addition to manual business forms, Reynolds now provides batch and remote computing services, turnkey systems, and microprocessor-based terminals primarily to automobile dealerships. Products and services are also marketed to accountants and medical practices.
- Fiscal 1985 revenue reached \$325.3 million, a 12% increase over fiscal 1984 revenue of \$289.8 million. Net income reached \$21.1 million, a 23% increase over income of \$17.1 million reported for fiscal 1984. A five-year financial summary follows:

THE REYNOLDS AND REYNOLDS COMPANY

REYNOLDS AND REYNOLDS
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/85	9/84	9/83	9/82	9/81
Revenue	\$ 325,337	\$ 289,808	\$ 252,233	\$ 220,978	\$ 212,236
• Percent increase from previous year	12%	15%	14%	4%	1%
Income before taxes	\$ 37,702	\$ 29,707	\$ 19,847	\$ 11,685	\$ 13,441
• Percent increase (decrease) from previous year	27%	50%	70%	(13%)	(35%)
Net income	\$ 21,072	\$ 17,146	\$ 11,939	\$ 7,833	\$ 7,118
• Percent increase (decrease) from previous year	23%	44%	52%	10%	(35%)
Earnings per share	\$ 4.49	\$ 3.61	\$ 2.51	\$ 1.66	\$ 1.51
• Percent increase (decrease) from previous year	24%	44%	51%	10%	(35%)

- Contribution to revenue of Reynolds' two business segments over the last five years follows:

REYNOLDS AND REYNOLDS
FIVE-YEAR REVENUE SUMMARY BY BUSINESS SEGMENT
(\$ thousands)

ITEM \ FISCAL YEAR	9/85	9/84	9/83	9/82	9/81
Computer Systems Revenue	\$ 188,598	\$ 161,524	\$ 140,726	\$ 116,830	\$ 112,359
• Percent of total	58%	56%	56%	53%	53%
• Percent increase (decrease) from previous year	17%	15%	20%	4%	(8%)
Business Forms Revenue	\$ 136,739	\$ 128,284	\$ 111,507	\$ 104,148	\$ 99,877
• Percent of total	42%	44%	44%	47%	47%
• Percent increase from previous year	7%	15%	7%	4%	14%

- Improved Computer Systems results were attributed primarily to increased sales of turnkey systems and terminals.

THE REYNOLDS AND REYNOLDS COMPANY

- Improved Business Forms results were attributed primarily to increased sales in automotive and automotive-related markets.
- Reynolds is currently organized into two operating divisions and one operating group as follows:
 - The Computer Systems Division provides turnkey systems, associated support services, and processing services.
 - The Automotive Computer Systems and Services unit markets turnkey systems and processing services to automobile dealers, as well as computer-related products and support services to automobile manufacturers, distributors, and importers. Client educational services are also provided through this unit.
 - The International unit markets Reynolds' products and services overseas.
 - The Business Systems Division markets business forms and printed products.
 - The Automotive/Automotive Related unit supplies business forms and manual systems to automobile, truck, and recreational vehicle dealerships. It also supplies the related automotive market which includes tire dealers, repair garages, auto parts firms, and body repair shops.
 - The Business Forms and Systems unit supplies printed forms and manual systems to the healthcare industry. This unit also offers customized printing of business forms.
 - Wilmer Service Line is a wholesale operation that markets one-write pegboard accounting systems to retail office supply outlets.
 - Direct Marketing is a unit that markets computer peripherals, supplies, and accessories through catalogs and telemarketing.
 - The Professional Services Group is an operating unit that develops and supports the company's Medical Systems, Tax Systems, and Reyna Financial Corporation businesses.
 - Medical Systems offers turnkey systems for medical practice management to physician practices.
 - Tax Systems provides tax processing services to small- to medium-sized professional tax preparation firms.
 - Reyna Financial Corporation is a nonconsolidated finance subsidiary that assists the Computer Systems Division in marketing its computer products.

THE REYNOLDS AND REYNOLDS COMPANY

- Revenue for the six months ending March 31, 1986 was \$168.2 million, a 7% increase over \$157.1 million for the same period a year ago. Net income rose 16% from \$8.9 million to \$10.3 million.
 - Computer Systems segment revenue increased 8% and gross profit 21% for this period, primarily due to increased sales of the company's new VIM/NET® 32000 turnkey system.
 - Business Forms segment revenue increased 5% and gross profit 7%.
- Recent acquisitions/divestitures/joint ventures relating to Reynolds' Computer Systems business segment include the following:
 - During the first quarter of fiscal 1986, Reynolds finalized the acquisition of Dyatron Corporation Pty. of Melbourne, Australia, an automotive turnkey systems subsidiary of Dyatron Corporation. The purchase price was \$3.5 million, less a contingency reserve of \$100,000 to be paid in June 1986.
 - In late 1985 Reynolds announced a joint agreement with Generale de Service Informatique (GSI) whereby both companies will share technology and product direction for worldwide products and services for automobile manufacturers and dealers.
 - During 1983 Reynolds discontinued the manufacturing of Expansion 6000 computers, TC 1000 terminals, and Expansion 6000-based turnkey systems for the contractor and medical markets.
 - Reynolds has phased out its processing services for hospital inventory management.
- Of Reynolds 3,701 employees, 1,208 are involved with computer services.
- Reynolds' major computer services competitors include Automatic Data Processing and Dyatron Corporation.

KEY PRODUCTS AND SERVICES

- INPUT estimates that in fiscal 1985 approximately 60% of Reynold's Computer Systems segment revenue was derived from turnkey systems sales and support, 15-20% from processing services, and the remainder from terminal sales.
- Reynolds' market has been in providing processing services and turnkey systems to automotive dealerships. Although this market still generates the majority of revenue, Reynolds has expanded its processing services to accountants and now also markets turnkey systems to medical practices.
- Reynolds has installed more than 17,000 turnkey systems in dealerships. The company's current product line, VIM/NET 5, introduced in early 1986, is based on the NCR Tower minicomputer.

THE REYNOLDS AND REYNOLDS COMPANY

- The systems provide auto dealers with applications for accounting, payroll, inventory management, invoicing, service merchandising, vehicle merchandising, and leasing functions.
- All VIM/NET 5 computers can be linked through a local area network to share and access data for total dealership integration.
- VIM/NET 5 systems include the following:
 - VIM/NET 5, Model 2000, is targeted to small dealerships entering into in-house computing or as an addition to an expanding system. The system can support one to eight terminal ports.
 - SERVICE/NET^{T.M.} is a version of VIM/NET 5, Model 2000 for dealership service departments that provides service merchandising and appointment scheduling applications.
 - VIM/NET 5, Model 32000, targeted to large dealerships, can support up to 24 workstations as a standalone system or 120 workstations in a networked configuration.
 - VIM/NET 5, Model 48000, targeted to very large dealerships, can operate up to 32 workstations as a standalone system or 128 workstations in a networked configuration.
- VIM/NET 5 systems range in price from \$30,000 to \$300,000 depending on the client's configuration requirements.
- Reynold's Onyx-based VIM/NET systems are no longer actively marketed.
- The Executive Data Management System, introduced in 1986, is a software product that permits access to information stored on a VIM/NET system via an IBM PC. The software permits pre-formatted and custom report generation, and interfaces to off-the-shelf software packages for spreadsheet, word processing, and data base management.
- Reynolds markets several IBM PC-based systems to automobile dealers as follows:
 - The Dealer Communication System provides dealers with a high-speed method of exchanging—with the manufacturer—information concerning warranty claims, vehicle and parts orders, and delivery schedules.
 - Reynolds also offers an IBM PC-based system to dealers for finance and insurance applications.
- In December 1985 Reynolds announced that it would be expanding its turnkey systems business to automobile manufacturers, importers, and distributors

through a newly established Manufacturer Services Group within the Automotive Computer Systems and Services unit. Through this group Reynolds now provides manufacturers with:

- Standalone communications processors for direct communications between auto dealers and manufacturers.
- Dealer communication systems (DCS) which integrate information between dealer sales, parts, service, and office systems departments.
- Interactive video information systems which combine videodisk, computer text, and computer graphics for dealer sales, training, and service applications.
- Centralized data collection systems that collect financial data from multiple dealerships nationwide.
- Support services, including training and education, hardware installation, maintenance, and software services.
- Turnkey system service and support is provided by 600 service personnel located in five regional and 80 local service offices. Regional educational centers provide specialized customer training, advanced seminars in accounting and parts and service merchandising, and executive and management information seminars.
- Reynolds provides processing services to vehicle dealerships as follows:
 - Timesharing services are provided via a national network of 60 VIM II computer sites. Applications available include accounting, payroll, and parts inventory control.
 - Batch processing services are also available for accounting, payroll, and parts inventory control.
- Products/services provided to other vertical markets include the following:
 - The Medical Practice Management System (MPMS), announced in 1984, is a NCR Tower-based turnkey system targeted to office-based group practices.
 - System features include automatic preparation of insurance forms and fee slips, complete accounts receivable aging, and management reporting.
 - MPMS ranges in price from \$25,000 to \$50,000 for a three-to-five physician system.
 - Batch and remote batch processing services are provided to professional accountants from its Walnut Creek (CA) and Atlanta data centers. Services include the following:

- AccuTax is a year-end tax processing system.
- General ledger accounting services are offered from the Atlanta office.
- Other accounting services include preparation of employee payrolls, accounts receivable, billing services, and AccuPay, a quarterly tax preparation system.
- Reynolds sells terminals/peripherals manufactured by Texas Instruments, C. Itoh, and Genicom. The company also sells IBM PC/XT and AT micro-computers.

INDUSTRY MARKETS

- The majority of Reynolds' Computer Systems revenue is derived from automotive dealerships and automobile manufacturers. The remainder of revenue is derived from accountants and medical practices.
 - Auto manufacturing clients include American Motors, Chrysler, General Motors, Ford/Lincoln Mercury, Mercedes-Benz, and Nissan.

GEOGRAPHIC MARKETS

- Approximately 92% of Reynolds' fiscal 1985 revenue was derived from the U.S. and 8% from international sources.
- Reynolds operates 142 sales offices in the U.S. and Canada. International subsidiaries are located in Australia, Canada, France, and South Africa.

COMPUTER HARDWARE AND SOFTWARE

- Regional computer centers are located in Dayton, Chicago, Walnut Creek and Arcadia (CA), Atlanta, and Brampton (Ontario, Canada). Reynolds uses equipment from various manufacturers, including IBM, Burroughs, and NCR.



FINANCIAL UPDATE TO PROFILE DATED MAY 1983*

**THE REYNOLDS AND REYNOLDS
COMPANY**
800 Germantown Street
Dayton, OH 45407
(513) 443-2000

Edwin F. Strasser, Chairman
Terry D. Carder, President and CEO
Public Corporation, OTC
Total Employees: 3,439
Total Revenue, Fiscal Year End
9/30/84: \$289,807,591
Computer Systems Revenue:
\$161,524,000

REYNOLDS AND REYNOLDS FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

FISCAL YEAR ITEM	9/84	9/83	9/82	9/81	9/80
Revenue	\$ 289,808	\$ 252,233	\$ 220,978	\$ 212,236	\$ 210,252
. Percent increase from previous year	15%	14%	4%	1%	16%
Income before taxes	\$ 29,707	\$ 19,847	\$ 11,685	\$ 13,441	\$ 20,371
. Percent increase (decrease) from previous year	50%	70%	(13%)	(35%)	(26%)
Net income	\$ 17,146	\$ 11,939	\$ 7,833	\$ 7,118	\$ 10,967
. Percent increase (decrease) from previous year	44%	52%	10%	(35%)	(26%)
Earnings per share	\$ 3.61	\$ 2.51	\$ 1.66	\$ 1.51	\$ 2.33
. Percent increase (decrease) from previous year	44%	51%	10%	(35%)	(26%)

- The Computer Systems segment revenue increased 15% to \$161.5 million in fiscal 1984 over \$140.7 million in fiscal 1983. The Business Forms segment revenue also increased 15% to \$128.3 million from \$111.5 million in fiscal 1983. Foreign subsidiaries contributed approximately \$22.3 million to net sales.

*Replaces Financial Update of June 1984

THE REYNOLDS AND REYNOLDS COMPANY

- Contribution to revenue of Reynolds' two business segments over the last five years follows:

REYNOLDS AND REYNOLDS FIVE-YEAR REVENUE SUMMARY BY BUSINESS SEGMENT (\$ thousands)

FISCAL YEAR ITEM	9/84	9/83	9/82	9/81	9/80
Computer Systems Revenue	\$ 161,524	\$ 140,726	\$ 116,830	\$ 112,359	\$ 122,558
• Percent of total	56%	56%	53%	53%	58%
• Percent increase (decrease) from previous year	15%	20%	4%	(8%)	20%
Business Forms Revenue	\$ 128,284	\$ 111,507	\$ 104,148	\$ 99,877	\$ 87,694
• Percent of total	44%	44%	47%	47%	42%
• Percent increase from previous year	15%	7%	4%	14%	11%

- In June 1984 the Medical Practice Management System for office-based physician practices based on the NCR Tower and the IBM PC/AT was announced.

SOURCE OF COMPUTER SYSTEMS REVENUE

- INPUT estimates that in fiscal 1984, 55% of Reynolds' Computer Systems Segment revenue was derived from turnkey systems sales and 25% from processing services. The remaining 20% was derived from the sale and service support of terminals and hardware.

THE REYNOLDS AND REYNOLDS COMPANY

REYNOLDS AND REYNOLDS
FIVE-YEAR SUMMARY OF COMPUTER SYSTEMS REVENUE
(\$ millions)

FISCAL YEAR ITEM	9/84*	9/83	9/82	9/81	9/80
Turnkey Systems • Percent increase (decrease) from previous year	\$ 88.5 27%	\$ 69.6 38%	\$ 50.6 13%	\$ 44.7 (16%)	\$ 53.0 39%
Processing Services Automotive Batch and On-Line Processing • Percent increase (decrease) from previous year	\$ 25 (16%)	\$ 29.6 (5%)	\$ 31.0 (6%)	\$ 33.0 (13%)	\$ 37.8 (20%)
Tax Preparation and General Ledger Batch Processing Services • Percent increase from previous year	\$ 15.5 17%	\$ 13.2 17%	\$ 11.3 23%	\$ 9.2 15%	\$ 8.0 N/A
Terminals • Percent increase (decrease) from previous year	\$ 32.5 15%	\$ 28.3 18%	\$ 23.9 (6%)	\$ 25.5 7%	\$ 23.8 42%

*INPUT estimate



COMPANY HIGHLIGHT

THE REYNOLDS AND REYNOLDS COMPANY

800 Germantown Street
Dayton, OH 45407
(513) 443-2000

Edwin F. Strasser, Chairman and CEO
Terry D. Carder, President and Chief
Operating Officer
Public Corporation, OTC
Total Employees: 3,349
Total Revenue, Fiscal Year End
9/30/82: \$220,978,308
Computer Systems Revenue:
\$116,830,000

THE COMPANY

- The Reynolds and Reynolds Company (Reynolds) was founded in 1866 in Dayton (OH) to manufacture and distribute standard and custom business forms. In addition to manual business forms, Reynolds now provides batch and remote computing services, turnkey systems, and microprocessor-based terminals primarily to vehicle dealerships. Products and services are also marketed to accountants, hospitals, medical practices, and service contractors.
- Reynolds' fiscal 1982 revenue reached \$221 million, a 4% increase over 1981 revenue of \$212.2 million. Net income rose 10% to \$7.8 million from \$7.1 million in 1981. A five-year financial summary follows:

REYNOLDS AND REYNOLDS
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/82	9/81	9/80	9/79	9/78
Revenue	\$220,978	\$212,236	\$210,252	\$181,161	\$140,236
• Percent increase from previous year	4%	1%	16%	29%	23%
Income before taxes	\$ 11,685	\$ 13,441	\$ 20,731	\$ 28,001	\$ 22,379
• Percent increase (decrease) from previous year	(13%)	(35%)	(26%)	25%	20%
Net income	\$ 7,833	\$ 7,118	\$ 10,967	\$ 14,762	\$ 11,948
• Percent increase (decrease) from previous year	10%	(35%)	(26%)	24%	22%
Earnings per share	\$ 1.66	\$ 1.51	\$ 2.33	\$ 3.15	\$ 2.56
• Percent increase (decrease) from previous year	10%	(35%)	(26%)	23%	21%

- Large expenditures for Expansion 6000 turnkey systems development and investments in Reynolds' tax processing operations combined for an overall fiscal 1982 operating loss in the Computer Systems segment. Despite a decrease in 1982 income before taxes, net income increased due to a more favorable income tax rate of 33% as compared to 47% in 1981.
- Declines in fiscal 1981 income resulted from the lower than anticipated revenue and high level of fixed costs associated with the automotive batch and VIM II interactive processing services as well as increased costs in the tax preparation processing business. Price concessions were granted in 1980 and 1981 to VIM III turnkey customers to help offset the high interest costs incurred in financing the purchase.
- Research and development expenses were approximately \$5.4 million in fiscal 1982 and \$4.8 million in 1981.

THE REYNOLDS AND REYNOLDS COMPANY

- Contribution to revenue of Reynolds' two business segments during the past five years follows:

REYNOLDS AND REYNOLDS FIVE-YEAR REVENUE SUMMARY BY BUSINESS SEGMENT (\$ thousands)

ITEM \ FISCAL YEAR	9/82	9/81	9/80	9/79	9/78
Computer Systems Revenue	\$ 116,830	\$ 112,359	\$ 122,558	\$ 102,428	\$ 70,997
• Percent of total	53%	53%	58%	57%	51%
• Percent increase (decrease) from previous year	4%	(8%)	20%	44%	47%
Business Forms Revenue	\$ 104,148	\$ 99,877	\$ 87,694	\$ 78,733	\$ 69,239
• Percent of total	47%	47%	42%	43%	49%
• Percent increase from previous year	4%	14%	11%	14%	6%

- Computer Systems revenue increased 4% in fiscal 1982 compared to an 8% decrease in 1981.
 - Turnkey systems revenue increased 13% over 1981 despite poor economic conditions within the auto industry, which had caused a 16% revenue decrease in this segment in 1981.
 - Automotive batch and on-line revenue continued to decline in 1982 as in 1981 and 1980 due to customers' migrating to in-house and turnkey systems and because fewer transactions were processed by existing clients.
 - Tax preparation service and related general ledger processing revenue increased 24% from \$9.2 million in 1981 to \$11.3 million in 1982.
 - Terminal sales decreased 6% in 1982. Increases in terminal sales in 1981 and 1980 were attributed to the introduction of the TC 1000 product line.
- Business Forms' fiscal 1982 revenue growth of 4% was realized from price increases. The 14% growth in 1981 revenue was the result of both volume and price increases.

THE REYNOLDS AND REYNOLDS COMPANY

- Revenue for the six months ended March 31, 1983 was \$121.8 million, up 12% from \$108.7 million for the same period in 1982. Net income was \$4.4 million, increasing 30% over approximately \$3.4 million in 1982.
 - Computer Systems Group revenue increased 17% and gross profit 35% for this period, primarily due to increases in the company's Dealer Computer Systems Division from sales of new VIM/NET turnkey systems.
 - Sales and profits in the Business Forms Group increased 6% between the two years.
- Reynolds was reorganized into four operating groups in January 1983, each headed by a group vice president.
 - The Computer Systems Group markets products and services through two divisions:
 - The Dealer Computer Systems Division markets processing services, turnkey systems, and terminals to the dealer market.
 - The Professional Systems Division markets income tax preparation processing services to professional accountants. The Expansion 6000 operation markets turnkey systems to the medical and contractor markets.
 - The Systems Development and Support Group manufactures terminals and computers at its Computer Manufacturing Operations facility and performs field maintenance and research and development for the other groups.
 - The Business Forms Group is responsible for the sale of manual systems and computer systems to certain specialized markets.
 - The International Group is responsible for Reynolds' Canadian subsidiary, Reynolds and Reynolds (Canada) Limited in Toronto, and licensing arrangements in other foreign countries.
- In June 1981 Reynolds incorporated Reyna Financial Corporation as a non-consolidated finance subsidiary to facilitate the marketing of its computers and related products. Reynolds' sales financed through the subsidiary were \$21.4 million in fiscal 1982 and \$15.5 million in 1981. Reyna contributed 9% of Reynolds' fiscal 1982 earnings.
- In January 1983 Reynolds and Sligos S.A., a French computer services firm headquartered in Paris, formed Sligos & Reynolds S.A., a joint venture 51% owned by Reynolds. The firm will market Reynolds' TC 1000-based batch services and VIM/NET turnkey systems to France's 5,000 vehicle dealers.

- In April 1983 Reynolds announced it was negotiating for the sale of its Computer Manufacturing Operations (CMO) facility. CMO, located in Cincinnati, employs 41 people and manufactures the Expansion 6000 computer used for Reynolds' contractor and medical turnkey systems and the TC 1000 and TC 1500 microprocessor-based terminals.
 - Reynolds plans to adapt its contractor and medical turnkey systems to the more advanced technology used in its VIM/NET systems. The company will continue to support Expansion 6000 systems, TC 1000, and TC 1500 series terminals previously sold. The TC 1000 series will continue to be offered, but their manufacture will be contracted out.
- Of Reynolds' 3,349 employees, approximately 1,400 are involved with computer services.
- Reynolds' major computer services competitors are Automatic Data Processing and DYATRON.

KEY PRODUCTS AND SERVICES

- In fiscal 1982, 43% of Reynolds' Computer Systems business revenue was derived from turnkey systems sales, an estimated 17% from batch, 6% from remote batch, and 13% from interactive processing. The remaining 21% of revenue was derived from the sale of terminals. A five-year summary of contribution to revenue from these product areas follows:

REYNOLDS AND REYNOLDS
FIVE-YEAR SUMMARY OF COMPUTER SYSTEMS REVENUE
(\$ thousands)

FISCAL YEAR ITEM	9/82	9/81	9/80	9/79	9/78
Turnkey Systems (VIM III, VIM/NET, Expansion 6000) • Percent increase (decrease) from previous year	\$ 50,600 13%	\$ 44,700 (16%)	\$ 53,000 39%	\$ 38,200 145%	\$ 15,600 N/A
Interactive Processing (VIM II) • Percent increase (decrease) from previous year	\$ 15,700 (8%)	\$ 17,000 (15%)	\$ 20,000 (21%)	\$ 25,300 4%	\$ 24,400 N/A
Batch and Remote Batch Processing • Percent increase (decrease) from previous year	\$ 26,600 6%	\$ 25,200 (2%)	\$ 25,700 16%	\$ 22,200 7%	\$ 20,800 N/A
Terminals • Percent increase (decrease) from previous year	\$ 23,900 (6%)	\$ 25,500 7%	\$ 23,800 42%	\$ 16,800 66%	\$ 10,100 N/A

- Reynolds' market has been in providing processing services and turnkey systems to vehicle dealerships. Although this market still generates the majority of revenue, Reynolds has expanded its services to accountants and hospitals and now markets turnkey systems to medical practices and contractors. Terminal sales also make a significant contribution to revenue.
- Reynolds' VIM III turnkey system, introduced in 1976, includes applications for accounting, inventory management, invoicing, service merchandising, lease, vehicle merchandising, payroll, and finance and insurance for automobile, truck, motorcycle, recreational vehicle, industrial truck, and farm implement dealers. The system runs on Hewlett-Packard minicomputers, can support up to 32 terminals, and ranges in price from \$29,000 to \$98,000.
- The VIM/NET series of turnkey systems, introduced in September 1982, are marketed to dealerships of all sizes. The systems feature a Local Area Networking capacity making it possible to connect up to 64 computers and 1,024 terminals. Reynolds is negotiating arrangements to market VIM/NET in seven international locations.

- Applications software performs the same functions as available on the VIM III system, with the addition of service scheduling and accounts payable.
- The systems use Onyx minicomputers running under a modified version of UNIX. Over 200 units were sold by December 1982.
- The systems are modular and expandable and include the following:
 - VIM/NET 3000, a version for small dealerships, was introduced in December 1982. The system can operate up to seven terminals and is priced at \$16,800.
 - VIM/NET 6000, for low-volume dealers, can drive up to seven terminals and is priced at \$19,800.
 - VIM/NET 9000 is marketed to medium to large dealerships. For use with up to 15 terminals, the system sells for \$29,800.
 - VIM/NET 12000, for very large dealerships, drives up to 32 terminals and is priced at \$79,800.
- In conjunction with the introduction of VIM/NET, Reynolds modified its standard computer sales and license agreements with respect to software license fees. The new agreement will eliminate the need to spread the income from the up-front license fee payments over the term of the customer's contract to immediate income recognition for license fees at the time of the system sale.
- In an attempt to broaden its Computer Systems market beyond auto dealers, Reynolds introduced the Expansion 6000 turnkey systems in 1981. Systems sales were delayed after introduction due to modifications and enhancements deemed necessary after the pilot stage. The systems, based on the first computers to be designed and manufactured by Reynolds at its Computer Manufacturing Operations in Cincinnati, sell for \$35,872.
- The contractor system is marketed to service contractors with annual sales of \$1 to \$20 million, including heating, ventilation, air conditioning, insulation, electrical, plumbing, and remodeling. Reynolds currently provides manual systems to over 12,000 of the 50,000 contractors targeted in this group.
 - Applications available on the system include financial reports, jobs in process, job costing, accounts payable and receivable, general ledger, payroll, and management reports.
- The medical system is targeted at approximately 42,000 group practices with 2 to 20 practitioners including medical doctors, osteopathic physicians, and chiropractors. Reynolds currently sells manual forms to over 8,400 of these medical practices.

- Applications available include insurance form preparation; management information including revenue, procedural, and payment analysis, hospital census reporting, aged accounts receivable, and unbilled insurance; patient scheduling; family and cycle billing; and reminder notices.
- In April 1983 the company announced plans to modify the contractor and medical systems to use the more advanced VIM/NET technology, replacing the Reynolds-manufactured Expansion 6000 computers. The medical system is currently being reprogrammed, including new features, and is expected to be available in summer 1983. Test marketing of the reprogrammed contractor system is planned for early fall 1983.
- VIM II, Reynolds' interactive processing system, provides accounting, inventory management, invoicing, service and lease vehicle merchandising, and payroll applications for small- to medium-sized dealerships.
 - Reynolds operates a national network of 75 VIM II computer sites and offers its own TC 1000 intelligent terminal for use with the service.
 - Dealers are able to communicate directly with their respective factories regarding parts, new cars, warranty claims, etc.
 - On a remote batch basis, dealers' terminals are polled nightly for accounting transactions and parts inventory data. The next morning the dealer receives an "error correction report" detailing transactions needing immediate review and adjustment, as well as management information.
 - Each month parts management reports as well as journals, accounts receivable statements, general ledger, and financial statements are computer printed and submitted to the dealership.
 - The VIM II service is primarily marketed to auto dealerships, truck, motorcycle, recreational vehicle, and farm implement dealers. The system has also been used in hospitals for inventory management to aid in cost containment.
- There is a parts inquiry capability associated with the VIM II and VIM III services. A larger local dealership with a VIM III turnkey installation may elect to wholesale parts. Local dealerships with VIM IIs or VIM IIIs can inquire whether the designated wholesale dealership has certain parts available by means of local leased lines. The inquiry capability is only local and not connected to a nationwide network.
- Batch and remote batch applications offered to dealership clients include accounting, parts inventory control, lease payroll, accounts receivable, and factory communications.

THE REYNOLDS AND REYNOLDS COMPANY

- Data may be delivered manually, mailed in, or communicated through TC 1000 series microterminal computers.
- Batch services markets include automobile, truck, recreational vehicle, farm implement, aircraft, marine, heating, and air conditioning dealerships.
- The Professional Systems Division, with approximately 150 employees, offers batch and remote batch processing services to over 3,000 accountants, tax preparation services, partnerships, and corporations from its Walnut Creek (CA), Arcadia (CA), and Atlanta offices. The division also recently began marketing several turnkey systems based on the TC 1500 programmable microprocessor. Professional Systems generated approximately \$11.3 million in tax preparation and related processing revenue in 1982. Services include:
 - Accounting and tax processing services.
 - AccuTax is a year-end tax processing system.
 - General ledger accounting services are offered from the Atlanta office.
 - Other accounting services include preparation of employee payrolls, accounts receivable, billing services, and AccuPay, a quarterly tax preparation system.
 - Several turnkey systems based on Reynolds' TC 1500 microprocessor are available:
 - AccuLedger II, developed by Reynolds, is a client accounting system designed specifically for the accountant in public practice. The product automates journals, trial balances, financial reports, and payroll reporting and includes an optional check-writing module.
 - AccuCalc, also developed by Reynolds, includes Tax Planning, Depreciation, and Loan Amortization modules.
 - Additional software developed by other vendors and modified for use on the TC 1500, is also available. Included are MicroPro International's WordStar word processing system with Mail-Merge, SpellStar, and SuperSort options; Sorcim Corporation's SuperCalc; and Microcomputer Tax Systems' MicroTax tax form processing package.
- Reynolds sells several makes of terminals including Texas Instruments, GE, Digital Equipment, and Western Union.
 - Reynolds also markets its own TC 1000 (Terminal Computer) series of fully programmable microprocessor terminals. Marketing of the new TC 1500 is handled through the Professional Systems Division.

THE REYNOLDS AND REYNOLDS COMPANY

- The TC 1000 is used in the Dealer Communications System (DCS) offered by Reynolds. DCS connects dealers with their respective automotive manufacturer in order to allow the direct communication of new vehicle orders, warranty claims, delivery reporting, and status inquiry of new vehicle orders.
 - Manufacturers who have DCS programs are Cadillac, Chevrolet, Buick, BMW, Honda, Oldsmobile, Pontiac, GM Parts, GMC Truck and Coach, Ford, Lincoln-Mercury, JRT, Toyota, and Chrysler.
- The TC 1000/Dealer Management System allows for distributed intelligent processing for accounting and parts inventory control.
- Markets for terminals include all vehicle, aircraft, farm implement, and industrial truck dealers; accountants; contractors, including heating and air conditioning; and other professional and retail businesses.
- The Business Forms Group is responsible for all the printing and marketing of business forms. In addition, this unit markets an inventory purchasing system for hospitals.
 - The system is available in a turnkey version or as an on-line application on Reynolds' network.
 - Modules include inventory purchasing and materials management. A mobile-cart exchange module is scheduled for release in September 1983.
 - The turnkey version, with approximately 100 installations, runs on BTI minicomputers.
 - Approximately 40 users access the system via remote computing services.

INDUSTRY MARKETS

- In fiscal 1982 an estimated 86% of Reynolds' Computer Systems revenue was derived from the retail distribution industry: automobile, truck, motorcycle, recreational vehicle, industrial truck, heavy equipment, farm implement, aircraft, and marine dealerships. Ten percent of Computer Systems' revenue was derived primarily from tax preparation and related processing for accountants. The remainder of revenue was from hospitals, medical practices, and contractors.

GEOGRAPHIC MARKETS

- Approximately 92% of Reynolds' fiscal 1982 Computer Systems revenue was from the continental United States and 8% originated from international sources, primarily Canada.

THE REYNOLDS AND REYNOLDS COMPANY

- The company has 141 sales offices in principal cities of the United States and Canada.

COMPUTER HARDWARE AND SOFTWARE

- Regional computer centers are located in Elmwood Park (NJ), Chicago, Walnut Creek (CA), and Brampton, Ontario.
 - The Elmwood Park, Chicago, and Brampton data centers currently operate Burroughs B 3890s, running under MCP.
 - An IPL 4446, operating under OS/VSI, is installed in Walnut Creek for processing tax returns by Reynolds' Professional Systems Division. The Walnut Creek center processes all data keypunched from Professional Services' Arcadia (CA) and Atlanta locations.



COMPANY PROFILE

THE REYNOLDS AND REYNOLDS COMPANY

800 Germantown Street
Dayton, OH 45407
(513) 443-2000

Edwin F. Strasser, CEO
Robert G. Timberlake, President
and Chief Operating Officer
Public Corporation, OTC
Total Employees: 3,431
Total Revenues, Fiscal Year End
9/30/80: \$210,251,745
Computer Systems Revenues:
\$122,558,000

THE COMPANY

- The Reynolds and Reynolds Company (Reynolds) was founded in 1866 in Dayton, OH, to manufacture and distribute standard and custom business forms. In addition to the manual business forms, Reynolds now provides batch, remote computing services, turnkey systems and, in 1980, began manufacturing microprocessor based terminals for sale to regular Reynolds' customers.
- Reflected in the chart below, total Reynolds sales increased 16% in 1980 to \$210,251,745 from \$181,160,565 in 1979. At the same time, net income decreased 26% from \$14,761,513 in 1979 to \$10,966,670 in 1980. Earnings per share were also down 26% to \$2.33 in 1980 from \$3.15 in 1979.

REYNOLDS FIVE-YEAR FINANCIAL SUMMARY (FYE 9/30 \$ thousands, except per share data)

FISCAL YEAR ITEM	1980	1979	1978	1977	1976
Revenues	\$210,252	\$181,161	\$140,236	\$113,820	\$94,873
• Percent increase from previous year	16%	29%	23%	20%	15%
Income before taxes	\$ 20,731	\$ 28,001	\$ 22,379	\$ 18,639	\$14,528
• Percent increase (decrease) from previous year	(26%)	25%	20%	28%	29%
Net income	\$ 10,967	\$ 14,762	\$ 11,948	\$ 9,806	\$ 7,997
• Percent increase (decrease) from previous year	(26%)	24%	22%	23%	30%
Earnings per share	\$ 2.33	\$ 3.15	\$ 2.56	\$ 2.11	\$ 1.71
• Percent increase (decrease) from previous year	(26%)	23%	21%	23%	31%

COMPANY PROFILE/THE REYNOLDS AND REYNOLDS COMPANY

- Reynolds posted record profits for the first six months of its 1980 fiscal year. These margins deteriorated significantly during the second half of the year largely due to the company's inability to maintain gross profit margins in the Computer Systems segment of its business.
 - The major factors contributing to weakened profit margins included the depressed automotive industry as a whole, increased bad debt expense and high interest costs.
 - The number of automotive dealers who closed in 1980 was three to four times higher than average. Provisions for these losses cost Reynolds more than \$1 million in additional expenses.
- Although Reynolds posted revenue gains of 16% in 1980, growth rates in its two major business segments declined from the previous year.
 - The Computer Systems Division posted a 20% increase in 1980 as compared to a 44% increase in 1979. Of this increase, VIM III in-house computer sales increased 39% (as compared with 138% in 1979) while revenues from the VIM II remote processing and automotive batch services experienced declines.
 - The decline of VIM II and batch service revenues was attributed to several customers' upgrading to the VIM III in-house system. Furthermore, fewer transactions were processed, reflective of the depressed economy in the automotive industry.
 - Terminal sales (included in the Computer Systems Division) increased 42% in 1980 as compared to 66% in 1979. Growth in revenues is attributed to the newly introduced TC 1000 product line.
 - Business Forms experienced an increase in revenues of 11.4% in 1980 as compared to 13.4% in 1979.
- The contribution to net sales of Reynolds' two business segments during the past five years follows:

COMPANY PROFILE/THE REYNOLDS AND REYNOLDS COMPANY

REYNOLDS
CONTRIBUTION BY BUSINESS SEGMENT
(\$ thousands)

FISCAL YEAR ITEM	1980	1979	1978	1977	1976
Computer Systems Revenues	\$122,558	\$102,428	\$70,997	\$48,377	\$35,436
• Percent of total	58%	57%	51%	43%	37%
• Percent increase from previous year	20%	44%	47%	37%	21%
Business Forms Revenues	\$ 87,694	\$ 78,733	\$69,239	\$65,443	\$59,438
• Percent of total	42%	43%	49%	57%	63%
• Percent increase from previous year	11%	14%	6%	10%	12%

- Because of Reynolds' exposure in only a few vertical markets, management recognizes that it must increase its efforts to broaden its markets, particularly for computer systems and services. This has been addressed by expanding into the medical, construction, legal and accounting marketplaces with new products.
- Reynolds is organized into four operating divisions, each headed by a senior vice-president/general manager. The divisions are:
 - Dealer Computer Systems Division, responsible for the sale of computer products and services to the dealer market. It is also responsible for the manufacture of terminals for the dealer market and computers for the other divisions.
 - Business Systems Division, responsible for the sale of manual systems and computer systems to certain specialized markets.
 - Professional Systems Division, responsible for the sale of computerized systems and income tax preparation services to professional accountants.
 - International Division, responsible for Reynolds' Canadian subsidiary and licensing arrangements in other foreign countries.
- Of Reynolds' 3,431 employees, 1,300 are involved with computer services. They are divided by function as follows:

COMPANY PROFILE/THE REYNOLDS AND REYNOLDS COMPANY

- Marketing sales	285
- Customer service	454
- Software service	120
- Computer operations	250
- General and administrative	129
- Computer manufacturing	<u>62</u>
	1,300

- Reynolds claims to be the largest supplier of both business forms and computer services to automobile dealers. Its major computer services competitors are Automatic Data Processing and Dyatron (formerly CARs).

KEY PRODUCTS AND SERVICES

- In 1980, 43% of Reynolds' Computer Systems business segment revenues were derived from turnkey system sales, 21% from batch processing and 16% from interactive processing. The remaining 20% of revenues were derived from the sale of terminals.
- A five-year summary of the approximate contribution of the four products of Reynolds' Computer Systems' segment follows:

REYNOLDS
FIVE-YEAR SUMMARY OF THE APPROXIMATE CONTRIBUTION
OF PRINCIPAL PRODUCTS TO COMPUTER SYSTEMS REVENUES
(\$ thousands)

FISCAL YEAR ITEM	1980	1979	1978	1977	1976
VIM III	\$53,000	\$38,000	\$16,000	\$ 4,000	\$ 700
• Percent increase from previous year	39%	138%	300%	471%	700%
VIM II	\$20,000	\$26,000	\$24,000	\$19,000	\$11,000
• Percent increase (decrease) from previous year	(23%)	8%	26%	73%	175%
Batch Services	\$26,000	\$22,000	\$21,000	\$22,000	\$22,000
• Percent increase (decrease) from previous year	18%	5%	(5%)	0%	(6%)
Terminals	\$24,000	\$16,000	\$10,000	\$ 3,000	\$ 1,700
• Percent increase (decrease) from previous year	50%	60%	233%	76%	(6%)

COMPANY PROFILE/THE REYNOLDS AND REYNOLDS COMPANY

- Reynolds' marketplace has been in providing processing services and turnkey systems to vehicle dealerships. Although this market still generates the majority of Reynolds revenues, Reynolds has expanded its position in accountant services and hospital materials management. The manufacture and sale of terminals is also making a significant contribution to revenues, as shown in the chart below:

	1980 (\$ millions)	1979 (\$ millions)	1978 (\$ millions)
Computer service and turnkey sales to transportation dealerships	\$ 89.9	\$ 84.2	\$61.1
Computer terminal revenues	\$ 24.0	\$ 16.3	\$ 9.5
Accounting and hospital service revenues	<u>\$ 8.7</u>	<u>\$ 1.9</u>	<u>\$ 0.4</u>
	\$122.6	\$102.4	\$71.0

- 1980 revenues derived from the VIM III turnkey system increased 39% above 1979, as compared with 1979's 138% increase over 1978. VIM III includes applications for accounting, inventory management, invoicing, service merchandising, lease, vehicle merchandising, payroll and finance and insurance (F&I) for automobile, truck, motorcycle, recreational vehicle, industrial truck and farm implement dealers.
 - There are 1,700 installations of VIM III. BTI Systems sell for an average of \$40,000 and are based on a Model 5000 computer.
- VIM II, Reynolds' interactive processing system, provides accounting, inventory management, invoicing, service merchandising, lease vehicle merchandising and payroll applications for small- to medium-sized dealerships.
 - The VIM II network serves 175 cities from 93 computer sites. Reynolds offers its own TC 1000 intelligent terminal for use with the VIM II service. Currently, 1,837 dealership clients spend an average of \$1,500 per month for the VIM II service.
 - Dealers are able to communicate directly with their respective factories regarding parts, new cars, warranty claims, etc.
 - On a remote batch basis, dealers' terminals are polled nightly for accounting transactions and parts inventory data. The next morning the dealer receives an "error correction report" detailing transactions needing immediate review and adjustment, as well as management information.
 - Each month, parts management reports as well as journals, accounts receivable statements, general ledger and financial statements are computer printed and submitted to the dealership.

COMPANY PROFILE/THE REYNOLDS AND REYNOLDS COMPANY

- There is a parts inquiry capability associated with the VIM II and VIM III services. A larger local dealership with a VIM III turnkey installation may elect to wholesale parts. Local dealerships with VIM IIs or VIM IIIs can inquire whether the designated wholesale dealership has certain parts available by means of local leased lines. The inquiry capability is only local and not connected to a nationwide network.
- Reynolds' 1980 batch services revenues increased 18% over 1979.
 - Batch applications offered to dealership clients include accounting, inventory management, lease payroll, accounts receivable and factory communications.
 - Reynolds operates six regional batch computer centers. Clients spend an average of \$760 per month.
 - Indicating that its customers prefer distributed processing via VIM II and the VIM III turnkey system, Reynolds had excess batch computing capacity. Management therefore closed two of its batch processing centers in Dayton and North Hollywood.
- A 50% increase in terminal sales was realized between 1979 and 1980. Reynolds sells several makes of terminals including Texas Instruments, GE, Digital Equipment and Western Union.
 - Approximately \$9 million of the 1980 \$24 million in terminal revenues were derived from the sale of Reynolds' TC 1000. There have been 2,000 TC 1000s sold to date. Price of the terminal ranges between \$4,800 and \$7,965 depending on peripheral attachments.
 - TC 1000 terminals are manufactured by Reynolds' Computer Manufacturing Operation (CMO) which is part of the Dealer Computer Systems Division.
 - The TC 1000 (Terminal Computer) is used in the Dealer Communications System (DCS) offered by Reynolds. DCS connects dealers with their respective automotive manufacturer in order to allow the direct communication of new vehicle orders, warranty claims, delivery reporting and status inquiry of new vehicle orders.
 - Manufacturers who have DCS programs are Chevrolet, Buick, Oldsmobile, Pontiac, GM Parts, Ford, Lincoln-Mercury, JRT and Toyota.
 - As of December 1, 1980, Reynolds claims to have sold over one-half of all DCS systems installed by automotive dealers.
- During 1980 the Dealer Computer Systems Division released the TC 1000/ Dealer Management System which allows for distributed intelligent processing for accounting and parts inventory control.

COMPANY PROFILE/THE REYNOLDS AND REYNOLDS COMPANY

- The Business Systems Division is responsible for all the printing and marketing of business forms. In addition, this division markets the Reynolds' computer services not related to the dealership or accountant markets.
 - The Division is responsible for the computer-based inventory management and purchasing system developed for hospitals in conjunction with Travenol Laboratories.
 - The Business Systems Division continued development of applications packages to be installed on TC 1000 terminals for the medical, attorney and contractor markets. Reynolds' management expects the first of these systems to be installed in March 1981.
- The Professional Systems Division (formerly Accumation) offers batch and remote batch processing services to accountants from its Walnut Creek, CA, and Atlanta offices. The division is also developing several turnkey systems based on the TC 1000. Professional Systems contributed approximately \$8.4 million to total 1980 revenues. Services include:
 - Accounting and tax services.
 - Accutax, a year-end tax processing system, generates approximately \$5.4 million in revenues. There are roughly 1,500 accountant clients. Approximately 350,000 returns a year are processed at an average of \$21 per return.
 - General ledger accounting services generated approximately \$1.5 million and served approximately 750 clients.
 - Other accounting services include preparation of employee payrolls, accounts receivable, billing services, accounting/billing systems for medical offices and Accupay, a quarterly tax preparation system. These services generated over \$1 million in 1980 revenues.
 - Turnkey Products.
 - There are two turnkey systems available now, although the marketing has not begun in earnest: AccuScript, a word processing system and AccuCalc, a loan amortization system.
 - In May 1981, Reynolds intends to introduce AccuLedger II, a general ledger system and AccuCalc - Depreciation, for the depreciation of any asset.
 - On June 30, 1980, Reynolds sold the accounts receivable business and related Honeywell computer from the Atlanta office of its Professional Systems Division to Receivable Systems, Inc., a newly formed company owned by the former Vice President of Eastern Operations of the Professional Systems Division.

COMPANY PROFILE/THE REYNOLDS AND REYNOLDS COMPANY

- Reynolds also offers the Compeg 2001, a desktop payroll system using a Texas Instrument 59 programmable calculator.
 - The system computes paycheck amounts, all tax and voluntary contributions, net pay and all other payroll data.
 - Compeg 2001 is receiving little marketing emphasis from Reynolds. It sells for \$1,200 and is marketed to small businesses which do not have computers or prefer not to use other automated payroll services. There have been 600 installations to date.

INDUSTRY MARKETS In fiscal year 1980, 90.4% of Reynolds and Reynolds' computer systems' revenues were derived from the retail distribution industry: automobile, truck, motorcycle, recreational vehicle, industrial truck, heavy equipment, farm implements, aircraft and marine dealerships. Another 6.9% of Computer Systems' revenues stemmed from accountants and 2.7% from hospitals/medical.

GEOGRAPHIC MARKETS

- Ninety-four percent of Reynolds and Reynolds' revenues were from the continental United States and 6% originated from Canada.
 - The company has 140 sales offices in principal cities of the United States.

COMPUTER HARDWARE AND SOFTWARE

- Regional computer centers for dealership processing are located in Dallas-Ft. Worth, TX; Elmwood Park, NJ; Chicago, IL; Atlanta, GA; Walnut Creek, CA; and Toronto, Canada.
 - Five of Reynolds' batch data centers currently operate Burroughs 4700s with the MCP operating system. The Atlanta data center uses a Burroughs 3800, operating under MCP.
- An IBM 370/138, operating under OS/VS1, is installed in Walnut Creek, CA, for processing tax returns by Reynolds' Professional Systems Division.
 - Due to the seasonal nature of the tax business, the Professional Systems Division also buys computer time from Blue Cross/Oakland, CA, and Computer Usage Company in Sunnyvale, CA.

COMPANY HIGHLIGHT

THE REYNOLDS AND REYNOLDS COMPANY

800 Germantown Street
Dayton, OH 45407
(513) 443-2000

Edwin F. Strasser, President, CEO,
and Director
Public Corporation, OTC
Total Employees: 3,294
Total Revenues, Fiscal Year End
9/30/79: \$181,160,565
Computer Services Revenues, Fiscal
Year End 9/30/79: \$102,428,000

THE COMPANY

- The Reynolds and Reynolds Company (Reynolds) was founded in 1866 in Dayton, Ohio to manufacture and distribute standard and custom business forms. Reynolds now provides batch and remote computer processing services and turnkey systems, in addition to the manual business forms.
- In 1979, Reynolds was reorganized from two operating divisions into four operating divisions, each headed by a senior vice president and general manager. The new corporate structure includes:
 - The Business Systems Division, responsible for the sales of all Reynolds' manual systems and for the marketing of computer systems to specialized markets. These markets include contractors, the medical profession, hospitals, and attorneys.
 - Dealer Computer Systems Division, marketing computer products and services to transportation dealerships.
 - Professional Systems Division, offering computerized systems for professional accountants, primarily through Reynolds' two recent acquisitions: Data Systems Corporation and Accumation Incorporated.
 - International Division, responsible for Reynolds and Reynolds (Canada) Ltd. and establishing licensing agreements with other foreign countries.
- Reflected in the chart below, total Reynolds sales increased 29% in 1979 to \$181,160,565 from \$140,235,975 in 1978. During the same time, net income increased 24% from \$11,847,588 in 1978 to \$14,761,513 in 1979. Earnings per share were up 23% to \$3.15 in 1979 from \$2.56 in 1978.

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

REYNOLDS
FIVE YEAR FINANCIAL SUMMARY
(\$ Thousand, Except Per Share Data)
(FYE 9/30)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
Revenues	\$181,161	\$140,236	\$113,820	\$ 94,873	\$ 82,440
• Percent increase from previous year	29%	23%	20%	15%	9%
Income Before Taxes	\$ 28,001	\$ 22,379	\$ 18,639	\$ 14,528	\$ 11,256
• Percent increase from previous year	25%	20%	28%	29%	2%
Net Income	\$ 14,762	\$ 11,948	\$ 9,806	\$ 7,997	\$ 6,132
• Percent increase from previous year	24%	22%	23%	30%	12%
Earnings Per Share	\$ 3.15	\$ 2.56	\$ 2.11	\$ 1.71	\$ 1.31
• Percent increase from previous year	23%	21%	23%	31%	13%

- Reynolds' management attributes its increase in total sales to individual gains by its two business segments. The Computer Systems Division posted a 44% increase in 1979, largely contributed by VIM III in-house computer sales which rose 138%. The Business Systems Division product sales increased 14%, which is partially due to price increases (6% of the total 14%).
- The contributions to net sales for the two business segments during the past five years are approximately as follows:

REYNOLDS
CONTRIBUTION BY BUSINESS SEGMENTS
(\$ Thousand)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
Computer Systems Revenues	\$102,438	\$ 70,997	\$ 48,377	\$ 35,436	\$ 29,321
• Percent of total	57%	51%	43%	37%	36%
• Percent increase from previous year	44%	47%	37%	21%	10%
Business Forms Revenues	\$ 78,733	\$ 69,239	\$ 65,443	\$ 59,437	\$ 53,119
• Percent of total	43%	49%	57%	63%	64%
• Percent increase from previous year	14%	6%	10%	12%	9%

- Reynolds' management anticipates the Computer Systems' revenues will continue to dominate its business. This segment of Reynolds' business is

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

expected to grow at least 35% per year, whereas Business Forms sales will grow at a rate of between 10% and 12% per year.

- In March 1979, Reynolds jointly formed Reyzon Computers with Zonic Technical Laboratories, Inc., of Cincinnati, Ohio. The joint manufacturing venture was formed to develop and manufacture the TC 1000 Terminal Computer. In January 1980, Reynolds exercised its option to purchase Zonic's interest in Reyzon, making Reynolds the sole owner of Reyzon. Renamed Reynolds and Reynolds Computer Manufacturing, it is now part of the Dealer Computer Systems Division.
- Effective October 1, 1979, Reynolds completed the acquisition of Accumation Inc. of Walnut Creek, CA, a provider of computer processing services for accountants and medical professionals. Accumation expected 1979 revenues to be \$4.8 million, and was acquired for \$6 million in cash. It became part of Reynolds' Professional Systems Division.
- In November 1979, Reynolds announced a joint marketing agreement with Travenol Laboratories, Inc., the principal operating subsidiary of Baxter Travenol Laboratories, Inc., of Deerfield, IL. The companies will sell computerized inventory management systems to hospitals in the United States.
 - Under the agreement, Reynolds will share advertising, sales, and promotion of a system which hospitals use to maintain inventories and stock balances using an on-site terminal. Customer orders go directly from Reynolds VIM II minicomputers into the computerized order entry and processing system maintained by Travenol at its U.S. distribution centers.
 - Reynolds' management estimates that the venture will produce about \$625,000 in revenue for Reynolds the first year and \$2 million the second.
- Of Reynolds' 3,294 employees, 1,355 (including Professional Systems Division employees) are involved with computer services. They are divided by function as follows:

- Marketing sales	329
- Customer service	440
- Software service	190
- Computer operations	310
- General and administrative	<u>86</u>
Total	1,355

- Reynolds claims to be the largest supplier of both business forms and computer services to automobile dealers. Its major computer services competitors are Computerized Automotive Reporting Service and Automatic Data Processing.

KEY PRODUCTS AND SERVICES

- In 1979, 37% of Reynolds' computer service revenues were derived from turnkey system sales, 25% from interactive processing, and 22% from batch processing. The remaining 16% of revenues were derived from the sale of terminals.
- Reynolds' traditional marketplace has been in providing processing services and turnkey systems to transportation dealerships. Although this market continues to provide the majority of Reynolds' revenues, the accountant service companies acquired have started to make an impact on total revenues as shown in the following estimates:

	1978 (\$ Million)	1979 (\$ Million)
Computer service and turnkey sales to transportation dealerships	\$61.1	\$ 84.2
Computer terminal revenues	9.5	16.3
Accounting and hospital service revenues	<u>0.4</u>	<u>1.9</u>
	\$71.0	\$102.4

- At the end of FY 1980, it is anticipated that accountant services will contribute approximately \$10 million to Reynolds revenues.
- 1979 revenues derived from the VIM III turnkey system increased 138% above the 1978 figure. VIM III provides applications for accounting, inventory management, invoicing, service merchandising, lease, vehicle merchandising, payroll, finance, and insurance for automotive dealerships.
 - There are 1,473 installations of VIM III. Systems sell for an average of \$42,000 and are based on a Basic Timesharing Model 5000 Computer.
- VIM II, Reynolds' interactive processing system, provides accounting, inventory management, invoicing, service merchandising, lease vehicle merchandising, and payroll applications for small- to medium-size dealerships.
 - The VIM II network serves 185 cities from 97 computer sites. Reynolds offers its own TC 1000 intelligent terminal for use with the VIM II service.
 - Dealers are able to communicate directly with their respective factories regarding parts, new cars, warranty claims, etc.
 - On a remote batch basis, dealers' terminals are polled nightly for accounting transactions and parts inventory data. The next

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

morning the dealer receives an "error correction report" detailing transactions needing immediate review and adjustment, as well as management information.

- Each month, parts management reports as well as journals, accounts receivable statements, general ledger, and financial statements are computer printed and submitted to the dealership.
- There are currently 1,837 dealership clients which spend an average of \$1,500 per month for the VIM II service.
- There is a parts inquiry capability associated with the VIM II and VIM III services. A larger local dealership with a VIM III turnkey installation may elect to wholesale parts. Local dealerships with VIM IIs or VIM IIIs can inquire whether the designated wholesale dealership has certain parts available by means of local leased lines. The inquiry capability is only local and not connected to a nationwide network.
- Reynolds' batch services revenues have not changed significantly since 1975. Reynolds' sales force has not been actively marketing batch services and management expects its contribution to revenues to decline.
 - Batch applications offered to the 3,237 clients include accounting, inventory management, lease, payroll, accounts receivable, and factory communications.
 - Reynolds operates seven regional batch computer centers. Clients spend an average of \$900 per month.
- Approximately \$16 million in 1979 revenues were derived from the sale of several makes of terminals including Texas Instruments, GE, Digital Equipment, and Western Union. The terminals are used in conjunction with the VIM II system.
 - Terminal sales in 1979 increased 60% over 1978 sales. Reynolds' management expects this business segment to become a larger contributor to total revenues.
- A five year summary of the approximate contribution of the four products of Reynolds' computer systems follows:

REYNOLDS
FIVE YEAR SUMMARY OF THE APPROXIMATE CONTRIBUTION
OF PRINCIPAL PRODUCTS TO COMPUTER SYSTEMS REVENUES
(\$ Thousands)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
VIM III	\$38,000	\$16,000	\$ 4,000	\$ 700	-
. Percent increase from previous year	138%	300%	471%	700%	
VIM II	\$26,000	\$24,000	\$19,000	\$11,000	\$ 4,000
. Percent increase from previous year	8%	26%	73%	175%	567%
Batch Services	\$22,000	\$21,000	\$22,000	\$22,000	\$23,500
. Percent increase (loss) from previous year	5%	(5%)	0%	(6%)	(3%)
Terminals	\$16,000	\$10,000	\$ 3,000	\$ 1,700	\$ 1,800
. Percent increase (loss) from previous year	60%	233%	76%	(6%)	(5%)

- The Dealer Computer Systems Division unveiled three new systems in 1979 in an effort to increase its penetration of the retail distributor market.
 - The Finance and Insurance (F&I) system is a point-of-sale system that helps a dealer increase the percentage of units financed and insured through its dealership. This system is fully integrated with the dealers' existing VIM III computer applications.
 - A proposed contract is calculated on an F&I terminal and automatically sent to VIM III, allowing the business office to review all the terms of the contract.
 - After the business office approves the contract, VIM III integrates the information with Accounting, Vehicle Inventory Control, Service Merchandising System, and the Vehicle Merchandising System.
 - VIM F&I automatically prepares the many documents necessary for the closing of each contract.
 - Reynolds' VOTE (VIM One Time Entry) is a formatted screen system to be used on the VIM III in-house computer system.
 - VOTE distributes data to many departments or areas within a dealership with only one input session.

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

- Whenever input is necessary to the VOTE terminal, a facsimile of the departmental form being used will be displayed on the terminal screen. The operator has simply to fill in necessary information by keying in the proper data.
- Vehicle Inventory Control (VIC) will permit a dealer's sales staff to match within seconds a customer's specifications to the available vehicles, for both on-premises inventory and inventory on order.
 - In the used vehicle department, inquiry by year/model, body size, and price range is possible. In addition, VIC displays investment-to-date, dealership cost, added options, and days in inventory.
 - VIC prepares pre-sale paperwork. The new or used deal envelope, washout summary, inventory card, window sticker, and key tags can be printed on a terminal in the office.
- The Business Systems Division is responsible for all the printing and marketing of business forms. In addition, this division markets the Reynolds' computer services not related to the dealership and accountant markets.
 - The Business Systems Division will eventually offer applications packages to be used on the TC 1000 terminals for specific industries including specialized subcontractors (such as for heating, ventilating, air conditioning), for the medical profession (doctors and dentists), and for attorneys.
 - At present the Division is responsible for the hospital inventory system which Reynolds markets jointly with Travenol Laboratories.
 - There are currently 50 installations of the hospital inventory system. Clients pay an average of \$1,000 per month for the service.
- The Professional Systems Division, with approximately 105 employees, provides computerized systems for professional accountants. The Division was formed to consolidate two recent acquisitions:
 - Accumation Inc., acquired in 1979, offers processing services to accountants.
 - Accutax, a year end tax processing system, ^{in 1980} generates approximately \$6 million in revenues and represents 80% of Accumation's business. There are roughly 2,500 accountant clients. Approximately 300,000 returns a year are processed at an average of \$16 to \$17 per return. Accutax is offered on a batch basis, although Reynolds' management plans to incorporate its TC 1000 terminal into a remote batch system within two years. ^{expects to generate}

Accumation

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

- Accupay, which is a quarterly tax statement preparation system, generates approximately \$600,000 in revenues. There are between 1,200 and 1,300 accountants using Accupay.
- Data Systems Corporation, acquired in 1978, provides a general ledger accounting service and contributes approximately \$2 million to Reynolds' revenues. An amortization program is also marketed.
- Seventy-five percent of its clients use the general ledger service on a remote batch basis via TC 1000 or TI 742 terminals.
- Data Systems is based in Atlanta and provides its services in the Southeastern areas of the country. Accumation is headquartered in Walnut Creek, CA and operates an additional processing center in Los Angeles. Reynolds plans to merge the capabilities of the two firms gradually and offer accounting services on a national basis.
- Reynolds manufactures the TC 1000 terminal computer through Reynolds and Reynolds' Computer Manufacturing (formerly Reyzon Computers).
- There have been 300 TC 1000s sold to date. Price of the terminal ranges between \$4,800 and \$7,965, depending on peripheral attachments. Reynolds' 1979 revenues were unaffected by the sale of TC 1000s.
- Reynolds is currently adding software to the TC 1000 to service the needs of contractors, medical offices, and attorneys.
- Reynolds also offers the Compeg 2001, a desktop payroll system using a Texas Instrument 59 programmable calculator.
- The system computes paycheck amounts, all tax and voluntary contributions, net pay, and all other payroll data.
- Compeg 2001 is receiving little marketing support from Reynolds. It sells for \$1,200 and is marketed to small businesses which do not have computers or prefer not to use other automated payroll services. There have been 600 installations to date.

INDUSTRY MARKETS In fiscal year 1979, 95% of Reynolds and Reynolds' computer systems' revenues were derived from the retail distribution industry: automobile, truck, motorcycle, recreational vehicle, industrial truck, heavy equipment, farm implements, aircraft, and marine dealerships. The other 5% of computer systems' revenues stemmed from accountants.

GEOGRAPHIC MARKETS

- Ninety-four percent of Reynolds and Reynolds' revenues were from the Continental United States and 6% originated from Canada.
 - The company has 134 sales offices in principal cities of the United States.

COMPUTER HARDWARE AND SOFTWARE

- Regional computer centers for dealership processing are located in Dayton, OH; North Hollywood, CA; Dallas-Ft. Worth, TX; Elmwood Park, NJ; Chicago, IL; Atlanta, GA; and Toronto, Canada.
 - Five of Reynolds' batch data centers currently operate Burroughs 4700s with the MCP operating system.
 - The Dayton and Atlanta data centers use Burroughs 3800, operating under MCP. (The other five centers plan to replace their Burroughs 4700s with the 3800 during 1980.)
- An IBM 370/138, operating under OS/VSI, is installed in Walnut Creek, CA for processing tax returns for Accumation.
 - Due to the seasonal nature of Accumation's tax business, it also buys computer time from Blue Cross/Oakland, CA, and Computer Usage Company in Sunnyvale, CA.



INPUT CONTACT REPORT

Page 1 of 3

STATE: OHIO

DATE WRITTEN: 4/15/81

COMPANY: <u>Reynolds & Reynolds</u>	INPUT STAFF:	REASON:	RELATING TO:
NAME: <u>Terry Carder</u>	(INIT.) <u>WWB</u>	☒ SALES	☐ MAS ☒ FSP
TITLE: <u>Executive Vice-President</u>	(INIT.)	☐ INTERVIEW	☐ CAMP
ADDRESS: <u>P.O. Box 1005</u>	☐ PHONE	☐ PRESENTATION	☐ USER
<u>Dayton, Ohio 45401</u>	☒ VISIT	☐ HOTLINE	☐ CUSTOM
	CONTACT DATE: <u>4/13/81</u>	☐ SUPPORT	☐ OTHER
PHONE (<u>513</u>) <u>443 - 2037</u>	☐ MAIL LIST	☐ OTH: _____	ID _____

DISCUSSION: I met with Terry for 45 minutes to discuss INPUT's programs on an overall basis. Terry has recently taken over the EVP position from Bob Timberlake, who is now the new President of R & R. Terry and I went through the FSP program in some depth, and he stated that in his opinion this was INPUT's primary opportunity to sell consulting work at his company. He stated that Bob had been resistant to spending money on consulting, but that the new field service organization under the management of Bud Tipple had a real need for advice in the area of field service. R & R is introducing a new computer system of its own manufacturer in 72 days. This computer system will be called the "Expansion ⁶⁰⁰⁰ ~~5000~~ System." It is their intent to use this as a central processor for all of their systems for auto dealers, doctor's offices, accounting firms, and other vertically integrated markets. R & R presently has 200+ technical support and application people in the field. These personnel are primarily applications oriented personnel, who do some problem identification, and also apply some technical

BUSINESS DEVELOPMENT POTENTIAL: Excellent; I think we have hit this organization at entirely the right time.

RECEIVED
APR 20 1981

☐ EXTRA PAGE(S) ATTACHED

ACTION DIST	TIME REQUIRED	DESCRIBE ACTION OR FOLLOW-UP	BY WHEN DONE	INFO DIST
Baker		Follow-up with Bud in next 2 weeks		Smith
Smith		Give Bud Tipple a call, spend some time explaining FSP program, emphasize importance of our service in building new field service organization.		Bishop Jackson Metz SARGENT



INPUT CONTACT REPORT

CONTINUED - 2 of 3 pages

 STATE: OHIO

 DATE WRITTEN: 4/15/81

COMPANY: <u>R & R</u> NAME: <u>Terry Carder</u> TITLE: <u>Executive Vice-President</u> ADDRESS: <u>P.O. Box 1005</u> <u>Dayton, Ohio 45401</u> PHONE (513) <u>443 - 2037</u>	INPUT STAFF: (INIT.) <u>WWB</u> (INIT.) _____ ☐ PHONE ☒ VISIT CONTACT DATE: <u>4/13/81</u>	REASON: ☒ SALES ☐ INTERVIEW ☐ PRESENTATION ☐ HOTLINE ☐ SUPPORT ☐ OTH: _____	RELATING TO: ☐ MAS ☒ FSP ☐ CAMP ☐ USER ☐ CUSTOM ID: _____ ☐ OTHER ID: _____
---	--	--	---

☐ MAIL LIST

DISCUSSION: fixes as designated by centralized field service personnel. R & R also has a staff which they call the "Communications Force" which specializes in technical aspects of field service. Currently, R & R performs 90% of their field service maintenance using their technical support personnel under the instruction of the communications and central manufacturing people. Frank Lobosco is a Senior Vice-President who is now heading up the overall field service operation for all R & R product groups. Bud Tipple is a Vice-President reporting to Frank. At the same time, a true field engineering group is being built up in Cincinnati, but only 3 people are resident on the staff at present. R & R plans to build up this staff significantly within the period of the next year. A preliminary analysis of field service productivity has been made, and a determination has been arrived at that a single technical support person is currently only covering 3 accounts. It is the intent of R & R to modify the organization so that one field person can cover 20 accounts. R & R currently spends

BUSINESS DEVELOPMENT POTENTIAL:

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APR 20 1981

PALO ALTO

RECEIVED

1981

PALO ALTO

☐ EXTRA PAGE(S) ATTACHED

ACTION DIST	TIME REQUIRED	DESCRIBE ACTION OR FOLLOW-UP	BY WHEN	DONE	INFO DIST

 WHITE • DIST GREEN • EXEC.; PROG. MGR.'S; YELLOW • CONTACT PINK • TERR. SALES MGR. GOLDENROD • ORIGINATOR
 P.A. LIBRARY



INPUT CONTACT REPORT

CONTINUED 3 of 3 pages

STATE: OHIO

DATE WRITTEN: 4/15/81

COMPANY: Reynolds & Reynolds	INPUT STAFF:	REASON:	RELATING TO:
NAME: Terry Carder	(INIT.) WWB	☒ SALES	☐ MAS ☒ FSP
TITLE: Executive Vice-President	(INIT.)	☐ INTERVIEW	☐ CAMP
ADDRESS: P.O. Box 1005	☐ PHONE	☐ PRESENTATION	☐ USER
Dayton, Ohio 45401	☒ VISIT	☐ HOTLINE	☐ CUSTOM
	CONTACT DATE: 4/13/81	☐ SUPPORT	ID: ☐ OTHER
PHONE (513) 443 - 2037	☐ MAIL LIST	☐ OTH:	ID:

DISCUSSION: \$12,000,000 per year on maintenance, and is losing \$800,000 per year on this operation. I made a separate call, following my call with Terry, on Bud Tipple-Vice-President of Services Dealer Computer Systems Division and Tom McClurg-Assistant Vice-President, Computer Systems Support. Bud and Tom were very interested in FSP, and we talked at some length about the program and the reports which we have produced in 1980, and plan to produce in 1981. Bud stated that they would review the elements of the program carefully, and he commented that he felt that there was a real match between what INPUT was doing, and their current needs in trying to put together a new corporate wide field service organization. He said that if I hadn't heard from him in the next week to make sure and get back in contact with him.

BUSINESS DEVELOPMENT POTENTIAL:

RECEIVED

APR 20 1981

FALO AUTO

☐ EXTRA PAGE(S) ATTACHED

ACTION DIST	TIME REQUIRED	DESCRIBE ACTION OR FOLLOW-UP	BY WHEN DONE	INFO DIST



File in Vendor File
Reynolds & Reynolds

Accumation (subsidiary of Reynolds & Reynolds)

q/ of operation	Revenue Summary (\$ Thousands)					FYE 12/31, except 1980
	1980	1979	1978	1977	1976	1975
	\$ 6,353	\$ 4,800	\$ 3,964	\$ 2,945	2,050	1,295
% increase	32%	21%	35%	44%	58%	

On page 7 of The Highlight:

The \$6 million figure was an expectation for 1980.
R & R's FY ends in Sept. and the Accumation
figures are: \$5,395 in revenues from Accutax
958 from other services
\$ 6,353 TOTAL

(The Accutax revenues are about \$400,000 lower
than expected)

ALL BNC#

9/25/80



COMPANY HIGHLIGHT

THE REYNOLDS AND REYNOLDS COMPANY

800 Germantown Street
Dayton, OH 45407
(513) 226-0808

Edwin F. Strasser, President
Public Corporation, OTC
Total Employees: 2,909
Total Company Revenues, Fiscal
Year End 9/30/78: \$140,236,000
Total Computer Systems Revenues
Fiscal Year End 9/30/78: \$70,997,000

THE COMPANY

- The Reynolds and Reynolds Company was founded in 1866 in Dayton, Ohio. It has two separate businesses: Manufacturing and distribution of business forms and providing computer products and services.
- From 1977 to 1978, company sales increased 23.2% from \$113,820,000 to \$140,236,000. Net income during this period grew 21.8% from \$9,806,000 to \$11,948,000.

FIVE YEAR FINANCIAL SUMMARY, REYNOLDS AND REYNOLDS COMPANY (\$ THOUSANDS)

FISCAL YEAR ITEM	1978	1977	1976	1975	1974
Business Forms Sales	\$ 69,239	\$ 65,443	\$59,438	\$53,119	\$48,861
Computer System Sales	70,997	48,377	35,436	29,321	26,771
Total sales	140,236	113,820	94,873	82,440	75,632
Income before taxes	22,379	18,639	14,528	11,256	11,016
Net income	11,948	9,806	7,997	6,132	5,458

- For the first time in the company's history, 1978 sales from Computer Systems exceeded the Business Forms sales. Of the total sales, 51% resulted from computer systems products and services, and 49% from the sale of business forms and related products.
 - Computer Systems 1978 sales were up 48% to \$71 million over 1977 revenues of \$48.3 million.

May 1979

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

- In April 1979, Reynolds and Reynolds entered into a joint manufacturing venture with Zonic Technical Laboratories to build intelligent terminals. The new firm, ReyZon Computers, represents Reynold's first venture into manufacturing. The intelligent terminals manufactured will be installed to provide user-site hardware services to new and existing clients.
- Effective July 1, 1978, Reynolds purchased Data Systems Corporation of Atlanta for \$2.1 million. Data Systems, now a division within the Computer Systems group, offers off-line general ledger service for professional accountants.
- The company has developed a very strong relationship with its customer base. By offering products and services ranging from business forms to small business computers, Reynolds and Reynolds has established itself as a leading information company. Its major competitors are Computerized Automotive Reporting Service and Automatic Data Processing.

KEY PRODUCTS AND SERVICES

- Both of Reynolds and Reynolds businesses are oriented toward distribution dealers of transportation equipment. This includes automobile, truck, boat, farm and construction machinery, airplane, and motorcycle dealers. More than 50% of all EDP system sales are to automobile dealers.
- The Computer Systems division of Reynolds receives 29.5% of its revenues from batch processing, 34% from remote computing (100% remote batch) and 22.5% from turnkey system sales to retail distribution clients. (The remaining 14% of revenues stems from the sale of terminals.)
- Computer Systems operates seven regional batch data centers. Applications available to clients include:
 - Accounting.
 - Inventory management.
 - Payroll application.
 - Lease.
 - Accounts receivable.
 - Management analysis.
- Reynolds operates a local network service, VIM II, which is available from 97 sales offices and serves 185 cities nation-wide.

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

- VIM II is an on-line computer service which provides accounting, inventory management, invoicing, service merchandising, lease, vehicle merchandising and payroll applications.
- Presently there are over 4,000 customers using the VIM service. Clients include automobile, truck, motorcycle, recreational vehicle, industrial truck, and farm implement dealers. Some hospitals use the inventory management services application.
- VIM II has been a very successful service. Reynolds invested approximately \$1.5 million in research and development of the product during 1974-75. In 1978, VIM II contributed approximately \$24 million in revenues.
- The VIM II service uses a Basic Timesharing Model 3000 computer.
- Reynolds also markets two turnkey system products: VIM III/Series 200 and Compeg 2001.
 - VIM III/Series 200 (formerly called VIM III), first introduced in July 1976, has increased in sales from \$674,000 in 1976 to approximately \$16 million in 1978.
 - There are 650 installations of VIM III. Price range of the turnkey system is \$25,000 to \$101,000.
 - VIM III uses a Basic Timesharing Model 5000 computer and offers the same application software as available on the VIM II service.
 - Compeg 2001, introduced in 1978, is a desk-top payroll system using a Texas Instrument 59 programmable calculator.
 - The system computes paycheck amounts, all tax and voluntary contributions, net pay and all other payroll data.
 - Compeg 2001 sells for less than \$1,000 and is marketed to small businesses which do not have computers or prefer not to use other automated payroll services. There have been 500 sold to date.
- Approximately \$10 million in revenues are derived from the sale of several makes of terminals. The terminals are designed to be used with the VIM II service and VIM III/Series 200 system.
- Reynolds has traditionally concentrated its products and sales to transportation dealerships. In an effort to expand into other industry sectors, Reynolds is now providing services to hospitals and professional accountants.

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

- In 1978 the company began marketing an on-line computerized inventory/purchasing system for hospitals as an additional application available through their VIM II service.
- The acquisition of Data Systems Corporation provided the necessary software to support the offering of off-line computerized general ledger services to accountants. This service is now being offered on a batch service basis, although Reynolds plans to convert it to a remote batch service.
- The company structures its marketing approach to its customers through all phases of automation. Users can start with the Compeg 2001 payroll system, move to batch processing or use the VIM II on-line service, and grow until they require an in-house turnkey system.
- A five year summary of Reynolds four computer product areas and the contribution of each to total revenues follows:

FIVE YEAR SUMMARY OF THE APPROXIMATE CONTRIBUTION OF PRODUCT AREAS TO TOTAL COMPUTER SYSTEMS REVENUES (\$ THOUSANDS)

	1978	1977	1976	1975	1974
Batch Services	\$21,000	\$22,000	\$22,000	\$23,500	\$24,300
VIM II	24,000	19,000	11,000	4,000	600
VIM III/Series 200	16,000	4,000	700	-	-
Terminals	10,000	3,000	1,700	1,800	1,900
	<u>\$71,000</u>	<u>\$48,000</u>	<u>\$35,400</u>	<u>\$29,300</u>	<u>\$26,800</u>

INDUSTRY MARKETS One hundred percent of Reynolds and Reynolds' computer systems service revenues are essentially derived from the retail distribution industry.

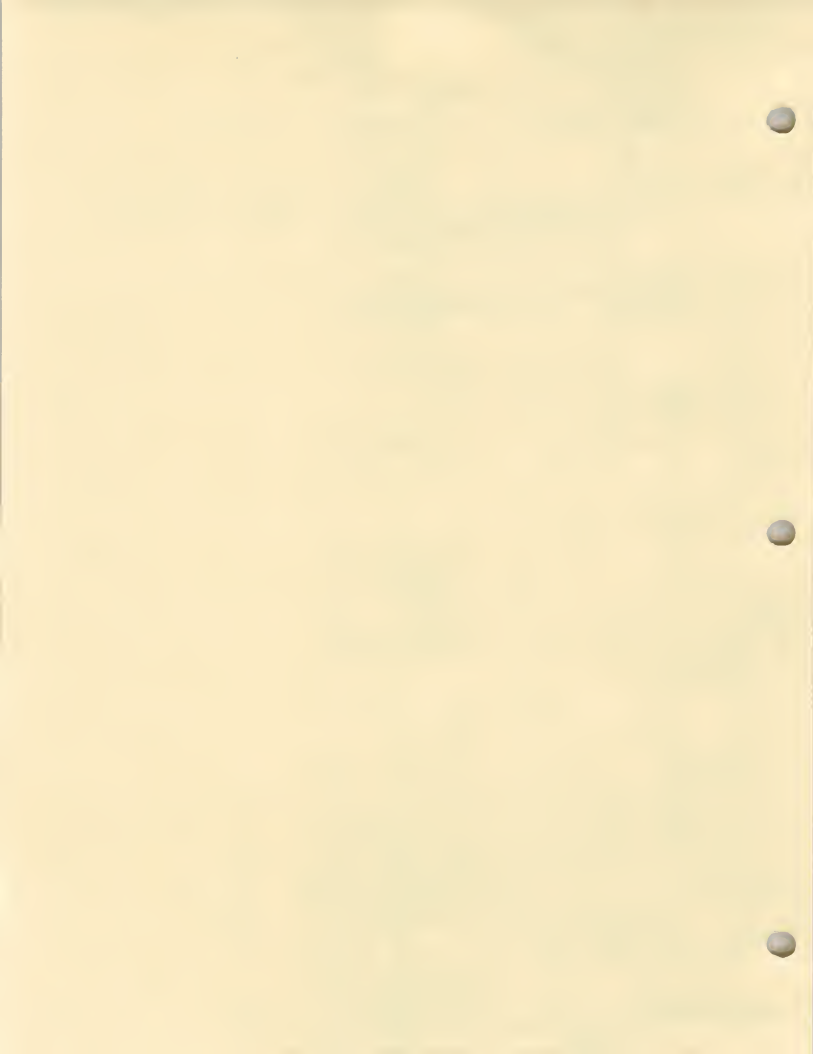
GEOGRAPHIC MARKETS

- Ninety percent of Reynolds and Reynolds revenues are from the continental U.S., the remaining 10% from Canada.

COMPANY HIGHLIGHT/THE REYNOLDS AND REYNOLDS COMPANY

- The company has 134 sales service centers fairly evenly distributed in principal cities throughout the U.S. Regional computer centers are located in Dayton, OH; North Hollywood, CA; Dallas-Ft. Worth, TX; Elmwood Park, NJ; Chicago, IL; Atlanta, GA; and Toronto, Canada.

COMPUTER HARDWARE AND SOFTWARE Each of the 7 batch data centers uses a Burroughs B4700 with the MCP operating system.



→ Budd L Typple
VP EDP Services

COMPANY HIGHLIGHT

THE REYNOLDS AND REYNOLDS COMPANY
800 Germantown Street
Dayton, OH 45407
(513) 226-0808

✓
Edwin F. Strasser, President
Public corporation, OTC
Total employees: 2,699
Net sales, fiscal year end
9/30/76: \$94,873,138

F2 = Cph soc: 35.11 m

THE COMPANY

9/30/77 F1 = 114,000,000
F2 = 48,000,000
F3 = 18,000,000
F4 = 8,000,000

- The Reynolds and Reynolds Company (R&R) was founded in 1866 in Dayton, Ohio. It has two separate businesses: manual business forms and electronic data processing services.
- From 1975 to 1976, company sales increased 15.1% from \$82.5 million to \$94.9 million. Net earnings during this period grew 30.4% from \$6.1 million to \$8.0 million. R&R forecasts a 15% sales and 20% - 25% profit increase between 1976 and 1977.
- The company had a before tax operating loss of \$600,000 attributed to R Ten (Reynolds terminal entry network) in FY 1975. This was a "build to order" system for wholesale distributors. R&R salesmen could not sell this service since they were used to selling the "standard" packages. This venture was sold to U.S. Steel in 1976.
- The company has developed a very strong relationship with its customer base. By offering products and services ranging from business forms to small business computers, R&R has established itself as the leading information company servicing the "big ticket" retail dealer. Its major competitors are CARS and ADP.

KEY PRODUCTS AND SERVICES

- Sixty-three percent of R&R's 1976 revenues were derived from designing, manufacturing, and marketing printed business forms. Revenues for this business have grown only 11% in the last five years, while profits have increased 17%.
- Both of R&R's businesses are oriented toward "big ticket" dealers. This includes automobile, truck, boat, farm and construction machinery, airplane, and motorcycle dealers. The company considers its potential market to include 30,000 automobile dealers; 15,000 of these are prospective customers. More than 50% of all EDP system sales are to auto dealers.

August 1977

COMPANY HIGHLIGHT/REYNOLDS AND REYNOLDS COMPANY

- Thirty-seven percent of 1976 revenues were derived from electronic data processing services. These revenues have increased 17% over the last five years, while profits have grown only 9%. The remainder of this report will focus on the data processing services offered by R&R.
- R&R provides 45% batch processing, 45% remote computing (40% interactive and 5% remote batch), and 10% turnkey systems to retail distribution clients.
- The company's average revenues per product or services as of Sept. 30, 1976, are shown below:

PRODUCT OR SERVICE	AVG. REV.	# OF SYSTEMS	GROWTH RATE
Batch & Remote Batch	\$3800/yr/client	Batch-4900 Remote -750	0%
VIM II on-line	\$6900/yr/system		123%
VIM III			
Sales	\$75,000-100,000	32	
Leases	\$1300-2500/mo/system	32	

Information as of 9/30/76

- R&R has two turnkey systems: VIM II and VIM III, which provide automobile dealers with accounting, inventory, and payroll processing.
 - VIM II is a turnkey system based on Basic Timesharing, Inc. computer systems and Western Union EDT 300 and EDT 33 hard copy terminals. VIM II was developed in FY 1975 when R&R invested \$900,000 in VIM II and it generated revenues of \$4 million. FY 1976 VIM II revenues were \$11 million. In April 1977, there were 137 VIM II computers installed at 71 sites serving 120 cities and 2,150 customers.
 - VIM III, introduced in FY 1976, is for larger dealerships and permits all departments to be online simultaneously. Its software is compatible with that of VIM II. The 18 installed by 9/30/76 were generating \$675,000 revenues in sales and leases. By December 30, 1976, 32 VIM IIIs were installed.
- The company structures its marketing approach to its customers through all phases of automation. Users can start by accessing R&R's batch processing facilities and grow until they require an

August 1977

COMPANY HIGHLIGHT/REYNOLDS AND REYNOLDS COMPANY

in-house small business computer also supplied by R&R -- VIM II or VIM III. R&R has 450 salesmen marketing its products on a "systems" service concept. Little or no program modifications are permitted.

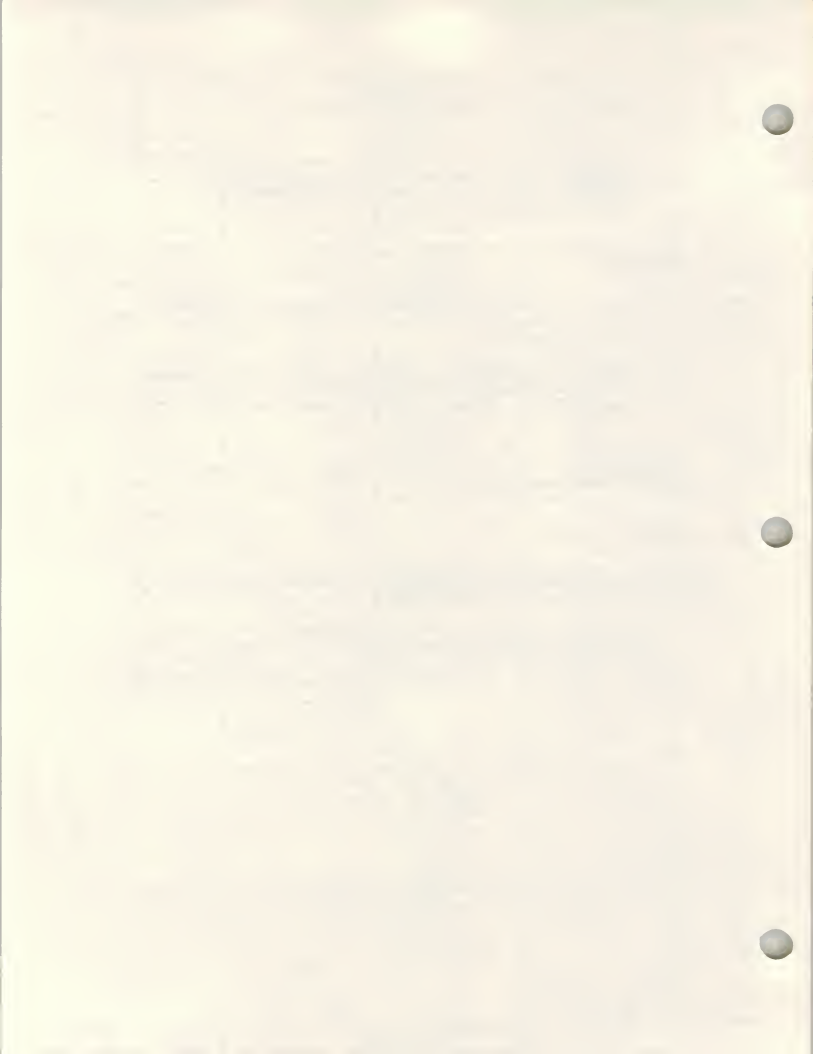
APPLICATIONS

- Services offered by the company can be classified as general business services despite their orientation to a relatively narrow set of users.
- Services include general accounting, payroll, parts inventory control, and lease and service merchandising. New applications planned for 1977 include vehicle merchandising and repair order invoicing.

INDUSTRY MARKETS R&R revenues are essentially 100% derived from the retail distribution industry.

GEOGRAPHIC MARKETS

- Ninety percent of R & R revenues are from the continental U.S., the remainder being from Canada.
- The company has 125 sales offices fairly evenly distributed in principal cities throughout the U.S. Regional computer centers are located in Dayton, OH; North Hollywood, CA; Dallas-Ft. Worth, TX; Elmwood Park, NJ; Chicago, IL; and Brampton, Canada (Toronto).



COMPANY REYNOLDS & REYNOLDSFY 9/30

FISCAL YEAR	ANNUAL REVENUE (\$millions) Total Data Subs.	ANNUAL GROWTH RATE (%)	COMMENTS
1971	51	12	
1972	57	14	
1973	65	17	
1974	76 27	8 7	
1975	82 29	16 21	
1976	95 35	20 20	
1977	114 42		
1978	140 52	15 116 % 22 24 %	Previous years Average 1977-1978
		20 %	Max Rate Projected Min Rate Projected
	Max Revenue	Min Revenue	Avg. Revenue
1979	62		
1980	75		
1981	90		
1982	108		
1983	129		



COMPANY	TOTAL REVENUES - 1978 1977 1976 1975				ACQUIRED Company	Place	Date	Rev.
3. R & R 9/30 Approx EDP	6mos-66.58 6mos 33.08	113.82 58.00	94.87 36.00	82.44 29.00				
4. Shared Medical Systems 12/31		45.69	35.47	22.56	Hosp Cpr Ctr.		10/75	4.1m
15. Jmushane 12/31 600 eng.	set of aeq customers, many diff. 4.2m 75-3.1m ± \$ 10m or 2man 10/75	101.17 2m 10/75 3m 75 7m 10/75 581,900 202m 3.6m 5m to 12/31/75 785,200 35-4m 2.5-4m 12/75 13.5m	81.84 pool purch. pool pooling purch. purch. pool pool not dec not dec pool	64.41 ± 1.5m 1977 costs to 1976 1977 costs to 1976 not dec not dec	tried to acquire lasco Response Sys Quelex Data Sys. Unitax Medical Data Sys. Weikin 29 USBA Simplified DP Medical Info Sys Carter Associates Auto fax (from the Research Center 7 miles) United Data Center	NY Longridge CA Anaheim Mahwah NJ SF SF Tollman CA	12/75 12/75 8/76 6/76 6/76 10/77 10/1976 1978 late 78? 1978 12/74	repair/rehub eqt tax returns med-fax address travel indus 6.1m fuel oil tax
16 MOS- dc tumor.								



COMPANY PROFILE

ROBIN & DACKERMAN INC.

330 Washington Street
9th Floor
Marina del Rey, CA 90292
(213) 574-1000

Bruce Robin, President and CEO
Private Company
Total Employees: 45 (11/90)
Total Revenue, Fiscal Year End
12/31/89: \$5,000,000

The Company

Robin & Dackerman provides telecommunications, communications cabling and networking, office automation, and information management consulting services to clients across industry segments.

Robin & Dackerman currently employs 45 people in offices in Los Angeles, San Francisco, and Honolulu.

Key Products and Services

One hundred percent of Robin & Dackerman's 1989 revenue was derived from professional services.

Robin & Dackerman specializes in the design, acquisition, and implementation management of telecommunications systems (voice and data); information systems, including microcomputer, minicomputer, and mainframe systems; voice, video and data universal wiring plans; and office automation systems. Additional services include the design and implementation of communications cabling and network systems.

Client assignments are performed on an hourly or fixed-fee basis, depending on client preference.

Industry Markets

Robin & Dackerman targets Fortune 1000 and growth companies in all industry segments.

Current clients include: Amgen, TRW, American Medical International, Kaiser Permanente, Carter Hawley Hale stores, Southern California Edison, Warner/Lorimar Studios, and state and federal government.

**Geographic
Markets**

Robin & Dackerman is active both in the U.S. and internationally.

Sales activities are carried out through the headquarters office located in Los Angeles. Branch offices are located in Honolulu (HI) and San Francisco (CA).

COMPANY BRIEF

Cross Industry: Professional Services

Robin and Dackerman
8484 Wilshire Boulevard
Suite 600
Beverly Hills, CA 90211-3214
(213) 655-2000

CEO: Jerry Dackerman, President
Private Company
Founded: 1977

Employees: 35 (11/86)
Revenue (FYE 12/31/86): \$2,000,000*

The Company: Robin and Dackerman provides telecommunications, office automation, and information management consulting services to clients across industries

Sources of Revenue:

- Professional Services (100%)

Key Products and Services:

- Professional Services
 - Robin and Dackerman specializes in the design, acquisition, and implementation management of telecommunications systems (data and voice); information systems, including microcomputer, minicomputer, and mainframe systems; and office automation systems.
 - Client assignments are performed on an hourly or fixed fee basis, depending on client preference.
 - Robin and Dackerman services do not target any specific industries. The company has no vendor affiliations.

Target Industries:

- Cross industry
- Target Fortune 500 companies
- Clients include Lear Siegler, TRW, American Medical International, Kaiser Permanente, Carter Hawley Hale Stores, Southern California Edison, and LORIMAR-Telepictures, among others.

Geographic Markets:

- U.S. (100%)
- 100% direct sales from headquarters in Beverly Hills (CA) and sales offices in Honolulu (HI) and Washington, D.C.

*INPUT estimate

December 1986



COMPANY BRIEF

Cross Industry: Accounting, Financial, and Systems Software

ROSSDATA Corporation

1860 Embarcadero Road
Palo Alto, CA 94303
(415) 856-1100

CEO: Kenneth Ross, President
Private Company
Founded: 1986

Employees: 150 (12/86)
Revenue (FYE 6/30/86): \$17,000,000*

The Company:

- ROSSDATA Corporation was formed in November 1986 by merging Ross Systems Inc. and Virtual Microsystems Inc. Both Ross Systems and Virtual Microsystems exist as operating subsidiaries, while ROSSDATA is the holding company providing financial and organizational support.
- ROSSDATA supplies DEC VAX application software, processing services, and VAX-IBM PC communications products
- The goal of this newly formed company is to become the largest supplier of VAX software products

Sources of Revenue:

- Application Software (40%)
- Systems Software (47%)
- Processing Services (6%)
- Professional Services (7%)

Key Products:

- See Ross Systems and Virtual Microsystems Company Briefs.

Target Industries:

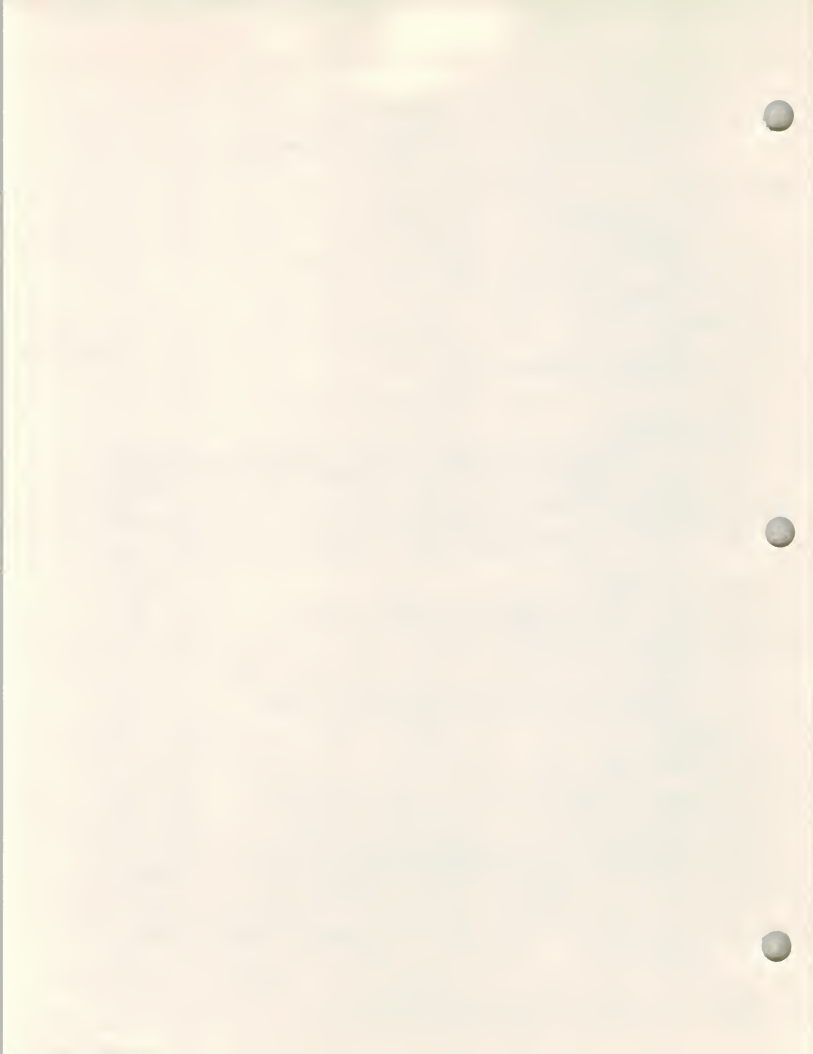
- Cross industry
- Fortune 500 companies

Geographic Markets:

- U.S.
- Non-U.S. (worldwide)
- Concentration of sales are in the U.S.
- Sales offices are located in San Mateo and Berkeley (CA), Boston, New York City, and the United Kingdom

* Company estimate, based on results from Ross Systems and Virtual Microsystems for fiscal 1986

December 1986



Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

February 1996

Ross Systems, Inc.

Chairman & CEO: Dennis V. Vohs
President & COO: J. Patrick Tinley
Center Two
Suite 750
1100 Johnson Ferry Road
Atlanta, GA 30342
Phone: (404) 851-1872
Fax: (404) 257-0434

ROSS
SYSTEMS

Status:	Public
Employees:	500 (10/95)
Revenue:	\$71,279,000
Fiscal Year End:	6/30/95

Version 3.1 runs on the Microsoft Windows NT operating system.

Key Points

- Ross Systems provides a range of software products for process manufacturing, distribution, maintenance, financial and human resource management applications.
- In February 1996, Ross Systems announced the release of its Windows-based Renaissance CS® Version 3.1, a suite of integrated client/server applications encompassing financials, manufacturing, health care and human resources solutions.
- In October 1995, Ross Systems acquired the rights for Renaissance CS Maintenance Management from CHAMPS Software, Inc. Ross had been reselling and supporting the product on an exclusive basis as part of its Renaissance CS systems. The terms of the agreement were not disclosed.
- In October 1995, Ross Systems formed a strategic partnership with Business Objects, whereby Ross will resell Business Objects™, an end-user decision support tool, as part of the company's Renaissance CS solution.

- In May 1995, Ross Systems established a new worldwide client/server Application Development Products Division. The company's GEMBASE™ application development environment will be the foundation of the new division. In the past 26 months, Ross Systems has used GEMBASE to reengineer its legacy applications to develop its Renaissance client/server applications.

Company Description

Ross Systems markets a range of business application software products and related services in the open systems, client/server market.

Ross Systems clients include medium-sized companies upgrading internal systems, as well as large companies downsizing their MIS operations. Ross Systems licenses its products through its distributors and a direct sales force.

- The company's products encompass financial, distribution and human resources systems, as well as process manufacturing, health care and public sector applications complemented by its GEMBASE fourth-generation application development language.
- Ross Systems' new line of client/server software for open systems environments is the Renaissance CS.

Company History

Ross Systems was founded in 1972 to provide consulting professional services. In 1983, the company expanded its business to include accounting software products and processing services.

In April 1991, Ross Systems made an initial public offering of 2.75 million shares of

common stock at \$10 per share. Net proceeds to the company were approximately \$25 million.

In September 1994, Ross Systems sold the assets related to its PRO/FIT distribution software product line, including software, related trademarks and copyrights, for \$22 million in notes receivable. This division marketed a COBOL-based application package.

During fiscal 1994, Ross reengineered its software products to support new open systems, client/server computing environments. Prior to the second half of fiscal 1993 it only delivered software for the proprietary Digital Equipment Corporation environment. As a result of the reengineering, Ross Systems now supports a number of open environments, including those from Digital and Hewlett-Packard, as well as IBM's RS/6000.

On July 30, 1995, Ross Systems and Argonaut Information Systems of California, Inc. reached a final settlement regarding an acquisition earn-out related to Ross Systems' 1990 acquisition of Argonaut. Ross Systems agreed to pay Argonaut approximately \$4.8 million. Ross Systems also issued 190,000 shares of its common stock to Argonaut, valued at approximately \$808,000, in exchange for a nonexclusive, worldwide royalty-free license to certain additional Argonaut technology.

Organization and Structure

Ross Systems has sales and support offices at its headquarters in Atlanta (GA) and in metropolitan Boston, Chicago, Dallas, Los Angeles, New York City, Redwood City (CA), San Diego and Toronto.

The company's international subsidiaries are located in Belgium, France, Germany, the Netherlands and the U.K.

Company Strategy

Ross Systems' strategy for its applications software products includes:

- Expanding its product line to work on a wider range of computers. Most of the company's products operate with UNIX and POSIX-compliant operating systems.
- Creating applications with GEMBASE to operate on relational database management systems from Oracle, CA-Ingres and Sybase
- Developing new products for additional customer bases, including those in international markets. The company also intends to broaden its international presence by entering into additional distribution agreements.

- Acquiring and integrating new software to supplement its existing product offerings

Financials

Ross Systems' fiscal 1995 revenue was \$71.3 million, a 6% decrease from fiscal 1994 revenues of \$76 million. Net losses were \$15.5 million for fiscal 1995 compared to net losses of \$18.7 million for the prior year.

- Results for fiscal 1995 include litigation settlements and expenses of nearly \$9.2 million associated with the Argonaut settlement and a second suit (a pending securities class action).
- A five-year financial summary is shown below.

Product development expenditures were virtually unchanged, at approximately \$16 million in fiscal 1995 and fiscal 1994.

Ross Systems, Inc. Five-Year Financial Summary (\$ Millions, except per share data)

Item	Fiscal Year				
	6/95	6/94	6/93	6/92	6/91
Revenue	\$71.3	\$76.0	\$87.1	\$75.5	\$61.1
• Percent change from previous year	(6%)	(13%)	15%	24%	42%
Income (loss) before taxes	\$(15.6)	\$(18.7)	\$(0.6)	\$6.6	\$2.2
• Percent change from previous year	(a) 16%	(b) *	(109%)	200%	N/A
Net income (loss)	\$(15.5)	\$(18.7)	\$(1.1)	\$4.0	\$0.9
• Percent change from previous year	17%	*	(128%)	344%	120%
Earnings (loss) per share	\$(1.28)	\$(1.86)	\$(0.12)	\$0.40	\$0.12
• Percent change from previous year	31%	*	(130%)	233%	116%

* Percent change exceeds 1,000%.

(a) Includes litigation settlement and expenses of \$9.2 million.

(b) Includes restructuring charges of \$1.9 million in fiscal 1994 associated with staff reductions.

Revenue Analysis by Product/Service

Approximately 34% of Ross Systems' fiscal 1995 revenue was derived from software product licenses, 35% from associated maintenance and 31% from consulting and other services. A three-year summary of source of revenue follows.

Approximately 90% of Ross Systems' software product license revenue for fiscal 1995 was derived from open systems, client/server applications, as compared to 81% in fiscal 1994.

- Total open systems, client/server software product license revenue rose approximately 7% in fiscal 1995 over 1994.

- Traditional Renaissance product line revenue declined 51% during the period.
- Renaissance CS Financial revenue increased 25% during fiscal 1995.

Fiscal 1995 consulting and other services revenue decreased approximately \$4 million (15%) compared to fiscal 1994. This was due primarily to the decline in software product license revenue in prior periods, upon which consulting revenue is dependent.

Maintenance revenue rose 1% during fiscal 1995 as compared to 13% during fiscal 1994. In both these years the increases were attributed to increases in the company's installed base of products, and only slight increases in price.

Ross Systems, Inc.
Three-Year Source of Revenue Summary
 (\$ Millions)

Product/Service	Fiscal Year					
	6/95		6/94		6/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Software product licenses	\$24.1	34%	\$25.1	33%	\$36.2	42%
Consulting and other services	22.0	31%	26.1	34%	29.0	33%
Maintenance	25.2	35%	24.8	33%	21.9	25%
Total	\$71.3	100%	\$76.0	100%	\$87.1	100%

Interim Results

Revenue for the three months ending September 30, 1995, declined to \$14.2 million, a 21% decrease from revenue of \$17.9 million for the same period in 1994. Net losses were \$3.6 million, as compared to net earnings of \$58,000 in the same period the prior year (which included a gain of \$755,000 associated with the sale of certain assets, and a credit of

\$345,000 related to a prior restructuring charge).

- Excluding the results of Ross Systems' PRO/FIT division, which it sold in September 1994, total revenue for the quarter declined 15%.
- New software product license revenue from manufacturing products increased 46% over the same period the previous year.

Market Financials

The segmentation of clients represented by Ross Systems' fiscal 1995 revenue was derived from clients in industry and government. Ross Systems' products are primarily used in mid-sized companies and larger organizations. Ross Systems' revenue is derived approximately as follows:

Manufacturing.....	30%
Nonprofit.....	20%
Business services.....	16%
Transportation, communications, and utilities.....	11%
Financial services.....	8%
Health care.....	8%
Wholesale/retail.....	5%
Other.....	<u>2%</u>
	100%

Geographic Markets

Approximately 60% of Ross' fiscal 1995 revenue was derived from the U.S., 32% from Europe and 8% from other export sales.

A three-year geographic source of revenue summary, as provided by Ross Systems, is shown below.

Fiscal 1995 North American software license revenue decreased \$3.44 million (20%) compared to fiscal 1994. North American consulting revenue decreased approximately \$5 million. The company attributes these declines primarily to the sale of the PRO/FIT product line.

European and Pacific Rim software product license revenue rose \$2.4 million (36%) and \$136,000 (20%), respectively, during fiscal 1995. European consulting revenue increased \$1 million (18%) during the same period. Ross Systems feels that improved sales execution by the company's international operations was responsible for the increase in revenue.

Ross Systems, Inc.
Three-Year Geographic Source of Revenue Summary
 (\$ Millions)

Geographic Market	Fiscal Year					
	6/95		6/94		6/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
North America (a)	\$48.5	68%	\$57.6	76%	\$59.7	69%
International	22.7	32%	18.4	24%	27.4	31%
Total	\$71.2	100%	\$76.0	100%	\$87.1	100%

(a) Includes export sales of \$5.8 million in fiscal 1995, \$4.5 million in fiscal 1994 and \$7.6 million in fiscal 1993.

Ross Systems' fiscal 1995 revenue from international operations increased to 40% of total revenue, as compared to 31% during fiscal 1994. Total European revenue declined from fiscal 1993 to 1994, but rose again in fiscal 1995. The company attributes the fiscal

1994 declines primarily to unfavorable changes in currency exchange rates and weak European economies. The increase in fiscal 1995 revenue was seen as the result of the new European management team efforts.

Employees

As of June 30 1995, Ross Systems had 499 employees in 31 offices worldwide, segmented as follows:

Marketing and sales.....	139
Product development.....	93
Professional services and client support.....	218
Finance, administration and operations	<u>49</u>
	499

Key Products and Services

Software

Ross Systems markets a range of business applications software that addresses the financial, distribution, manufacturing and human resource needs of corporations, government, nonprofit agencies and other information-intensive institutions. The company has licensed over 11,000 software products to more than 2,700 customers worldwide.

Ross Systems' current software products are summarized in the exhibit on the following page.

Ross Systems' Renaissance CS is available for the following open systems environments: Hewlett-Packard's HP-UX and MPE/iX; IBM's RS/6000; and Digital's Alpha AXP architecture, OpenVMS and Digital UNIX. The company recently announced that it will offer its Renaissance CS suite of integrated business applications on the Microsoft NT operating system.

- Renaissance CS Financials is a set of integrated financial accounting products designed for worldwide organizations, using multicurrency and multilingual capabilities.

- Renaissance CS Manufacturing is a set of planning, execution, quality assurance and costing applications to manage process manufacturing operations.
- Renaissance CS Distribution is a set of logistics and materials management applications. It supports sales orders through resource planning and sales forecasting.
- Renaissance CS Maintenance manages facilities and equipment maintenance, including predictive and preventive maintenance programs.
- Renaissance CS Materials Management handles all activities surrounding the procurement, storage and movement of goods within an organization.
- Renaissance CS Human Resources addresses personnel matters, from employee time management to payroll.
- Renaissance CS Public Sector, introduced in 1991, is a user-defined budget tracking and control system that includes general ledger, accounts payable and purchase order applications, as well as encumbrance accounting and bid tracking functionality.
- Renaissance CS Health Care provides integrated solutions, including human resources, payroll, benefits, financials and materials management.

The COMMAND Series product line, acquired with Pioneer in 1991, is no longer actively marketed.

Ross Systems' software products are summarized in the exhibit on the following page.

Exhibit

Ross Systems, Inc.

Renaissance Applications Software Products

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
Renaissance CS Financials - General Ledger - Accounts Receivable - Accounts Payable - Purchase Order - Fixed Assets - Budgetary Control - Currency Management - Cost Allocations - Desktop Budgeting - Desktop EIS - Desktop Results - Job Costing	Renaissance CS Manufacturing - Production Planning - Process Manufacturing - Process Costing - Inventory Control - Warehouse Management - Purchase Order Processing - Sales Order Processing - Sales Analysis - General Ledger - Accounts Payable - Accounts Receivable - Fixed Assets
Renaissance CS Distribution - Sales Order Processing - Sales Analysis - Accounts Receivable - Inventory Control - Warehouse Management - Purchase Order Processing - Sales Forecasting - Distribution Resource Planning	Renaissance CS Maintenance - Equipment Maintenance
Renaissance CS Human Resources - Payroll - Human Resources - Benefits	Renaissance CS Health Care - Human Resources - Payroll - Benefits - Financials - Materials Management
Renaissance CS Public Sector - Public Sector	Renaissance CS Materials Management - Inventory Control - Warehouse Management - Purchase Order Processing - Accounts Payable

Professional and Support Services

Ross Systems' Professional Services organization provides business application and technical product expertise to complement Ross Systems' products. The major types of services provided include:

- Management Consulting, providing in-depth analysis of the client's need and the preparation of detailed plans that list step-by-step actions and procedures necessary to achieve a timely implementation of Ross Systems' software products. These services are generally offered on a time-and-materials basis.
- Technical Consulting, involving the evaluation and management of the client's needs by supplying custom systems and interfaces, and data and system conversions. Consultants also provide advanced technology services focused on networking, and database administration and tuning. These services are offered on a time-and-materials basis.
- Education Services are offered to clients at either Ross Systems education facilities or at the clients' locations, for either standard or customized classes. These classes are priced at either fixed daily rates or on a per-class basis.

Ross Systems' Client Support includes telephone support, technical publications and an electronic bulletin board, and is provided under Ross Systems' standard maintenance agreements. The annual maintenance fee for these services is based upon a percentage of the then-current list price for the licensed software. The standard maintenance agreement also entitles clients to new releases and product enhancements.

Clients

Ross Systems' clients are companies installing open systems, client/server software products, and include medium-sized companies upgrading internal systems as well as large companies downsizing their MIS operations.

As of June 30, 1995, Ross had licensed approximately 11,000 software products to over 2,700 customers worldwide.

Marketing and Sales

Ross Systems sells its products and services through its direct sales force, joint marketing agreements and distributors.

Ross Systems is involved in joint marketing activities with major value-added resellers (VARs), including Avnet, Pioneer and MTI.

The company also has distribution arrangements with distributors in Malaysia, Hong Kong, Japan, Taiwan, Thailand, Australia, Brazil, Hungary, Italy, New Zealand and Spain. These distributors market Ross Systems' products through offices in Abu Dhabi, Auckland, Bangkok, Barcelona, Budapest, Hong Kong, Kuala Lumpur, Madrid, Melbourne, Rio de Janeiro, Sydney, Taipei, Tokyo, Torino and Yokohama.

Alliances

Ross Systems has a number of marketing, sales and product development relationships with Digital and is a Digital Cooperative Marketing Partner.

Since 1992, Ross Systems has had a close working relationship with HP for joint development and marketing. Ross Systems' financial, manufacturing, distribution and 4GL application development products operate with HP hardware supporting the HP-UX and HP MPE/iX operating environments.

- In October 1995, Ross Systems formed a strategic partnership with Business Objects, whereby Ross Systems will resell the decision support tool, Business Objects, as part of its Renaissance CS product line.
- In May 1995, HP selected Ross as its premier supplier of process manufacturing software applications for manufacturers using HP 3000 MPE/iX.
- Ross Systems and HP have a cooperative marketing arrangement whereby Ross Systems receives promotional assistance from HP.

In March 1995, Ross Systems announced a VAR partnership with Sybase to jointly market their respective client/server products. Ross will ship its line of Renaissance CS client/server business applications for Sybase's relational database, System 10 SQL Server™.

In September 1994, IBM and Ross Systems established a joint development and marketing agreement to make the Renaissance CS product line available across IBM's entire family of RS/6000 servers. Ross Systems and IBM also have a cooperative marketing arrangement whereby Ross Systems receives promotional assistance from IBM.

The company also has agreements that enable it to resell Oracle and Ingres relational database management systems.

Competition

Business application software competitors include Oracle, PeopleSoft, SAP, Dun & Bradstreet Software, Datalogix and Marcam Corporation.

In the human resources market, Ross Systems' main competitor is PeopleSoft.

INPUT Assessment

Ross Systems' strengths include:

- Functionally rich applications
- High levels of integration across the applications
- A three-tiered, open systems architecture
- Worldwide capabilities
- A large installed base
- Full-service offerings—applications, consulting services, education and training

Challenges facing Ross Systems over the coming year include:

- Converting its large customer base on legacy systems to Renaissance CS applications
- Returning to high-growth status
- Continuing its expansion into international markets
- Continuing to respond to changing market requirements in terms of additional functionality
- Expanding its open systems strategy to integrate more third-party and customer-developed applications and enhancements into its total solution
- Maximizing its impact in identified vertical markets

INPUT has identified the following strategies for improving Ross Systems' profitability:

- Increasing and strengthening its promotional efforts

- Increasing indirect distribution with third-party resellers
- Achieving higher revenue per existing customer
- Marketing its products on Windows NT profitably and aggressively to niche markets

Company Profile

A Publication from INPUT's Vendor Analysis Program

April 1994

Ross Systems, Inc.

Chairman & CEO: Dennis Vohs
555 Twin Dolphin Drive
Redwood City, CA 94056
Phone: (415) 593-2500
Fax: (415) 592-9364

Status:	Public
Employees:	600 (3/94)
Revenue:	\$ 87,102,000
Fiscal Year End:	6/30/93

Key Points

- Ross Systems is a supplier of business applications software and related services for open systems environments.
- During fiscal 1993, Ross Systems made the transition from exclusively supporting the DEC environment to broadening its product offering to include a series of integrated products for the open systems client/server marketplace.
- In December 1993, Ross Systems announced a development agreement with IBM to port Ross Systems' business applications to IBM's RS/6000 platform. Availability is scheduled for 1994.
- The company has introduced Renaissance CSTM—an open systems client/server set of integrated accounting products and Human Resource CSTM—an open systems client/server suite of human resource management applications.
- A client/server version of Ross Systems' PROMIX™ process manufacturing applications was introduced in January 1994.

- Ross Systems has established joint marketing agreements with Shared Medical Systems in the health care market and Campus America in the college and university market. These companies will offer the Ross Systems' financial products to their respective markets.

Company Description

Ross Systems markets a range of business applications software products and related services for open systems environments.

- The company's products encompass financial, human resources and distribution systems, as well as manufacturing and public sector applications complemented by a fourth-generation application development language, GEMBASE™.
- The products are available and/or are being developed for the following open system environments: DEC Alpha AXP architecture, Open VMS and OSF/1; Hewlett-Packard's HP-UX and MPE/iX; UNIX; and IBM's RS/6000.

Company History

Ross Systems was founded in 1972 to provide consulting professional services. In 1983, the company expanded its business to include software products and processing services.

In November 1988, Ross Systems announced a management buyout of the company for an undisclosed sum. The purchase was led by current management and a group of outside investors led by Dennis Vohs. Other investors included Welsh, Carson, Anderson and Stowe;

Citicorp; Morgan Stanley & Co.; and Greylock Management Corp.

On April 26, 1991, Ross Systems made an initial public offering of 2.75 million shares of common stock at \$10 per share. Net proceeds to the company were approximately \$25 million.

In August 1991, the company issued approximately 793,000 shares of its common stock for all of the outstanding shares of Pioneer Computer Group Ltd., a U.K.-based supplier of discrete and process manufacturing systems. The business combination was accounted for as a pooling of interests and, accordingly, all financial information for prior periods was restated to include the results of Pioneer.

Structure and Operations

Ross Systems has sales and support offices at its headquarters in Redwood City (CA) and in the metropolitan areas of Atlanta, Boston, Calgary, Chicago, Dallas, Los Angeles, Montreal, New York City, Pittsburgh, San Diego, Toronto and Washington, D.C.

Ross Systems' international subsidiaries in Belgium, France, Germany, the Netherlands and the U.K. provide sales, customer support and professional services.

Ross Systems has distribution agreements with distributors covering the Far East, Middle East, Australia, Italy and Spain. These distributors market Ross Systems' products through offices in Abu Dhabi, Bangkok, Barcelona, Hong Kong, Madrid, Malaysia, Melbourne, Sydney, Taipei and Turin.

Company Strategy

Ross Systems' strategy for its applications software products includes:

- Enabling its products to operate in open systems computing environments. Ross Systems' product line is being ported to UNIX and POSIX-compliant operating systems, including those marketed by DEC, HP and IBM. The company is also porting its GEMBASE 4GL and all applications that have been developed with GEMBASE to operate on server databases from Oracle and Ingres.
- Developing new products that address the needs of additional customer bases, including those in international markets.
- Acquiring new products to supplement its existing product offerings.

Financials

Ross Systems' fiscal 1993 revenue reached \$87.1 million, a 15% increase over fiscal 1992 revenue of \$75.5 million.

- The results for fiscal 1993 include a \$6.4 million pretax charge accrued in the first quarter of fiscal 1993 related to prior acquisitions, which contributed to a net loss of \$1.1 million.
- In the four-year summary that follows, financial information for fiscal years prior to 1993 has been restated to reflect a change in the method of accounting for maintenance revenues. In addition, financial information for fiscal 1990 and 1991 has been further restated to include the Pioneer acquisition in August 1991.

Ross Systems, Inc.
Four-Year Financial Summary
 (\$ Millions, except per share data)

ITEM	FISCAL YEAR			
	6/93	6/92	6/91	6/90
Revenue	\$87.1	\$75.5	\$61.1	\$43.0
• Percent change from previous year	15%	24%	42%	N/A
Income (loss) before taxes	\$(0.8)	\$6.6	\$2.2	N/A
• Percent change from previous year	(109%)	200%	N/A	N/A
Net income (loss)	\$(1.1)	\$4.0	\$0.9	\$(4.6)
• Percent change from previous year	(128%)	344%	120%	N/A
Earnings (loss) per share	\$(0.12)	\$0.40	\$0.12	\$(0.75)
• Percent change from previous year	(130%)	233%	116%	N/A

Ross Systems' management attributes revenue growth in fiscal 1993 to the following:

- Revenue from software product licenses increased only 2% primarily due to a 24% growth in North American software license revenues offset by a 27% (\$4.4 million) decline in Europe.
- In North America, software license revenues for client/server and PROMIX software increased to \$6.9 million and \$10.7 million, respectively, during the year. The release of Renaissance CS client/server in January 1993, Human Resource CS client/server in April 1993 and a new release of the PROMIX manufacturing software in December 1992 fueled the growth of these products.
- The company also experienced software license revenue growth in the export market where sales increased from approximately \$4.9 million in fiscal 1992 to \$7.6 million in fiscal 1993. Export revenues are generated by its Asian distributors and Canadian sales by U.S.-based sales personnel. Most significantly, software revenues in the Asian export market more than doubled during fiscal 1993.
- Software license revenue declines in Europe were primarily due to the European recession and unfavorable changes in currency exchange rates.
- Revenue from maintenance services increased 26%, reflecting increases in Ross Systems' installed base of products following strong growth in software

licenses in fiscal 1992 and 1991. In addition, there were modest price increases in fiscal 1992 and 1993.

- Consulting revenues continue to represent a growing portion of the company's total revenues. Consulting revenues increased 27% during fiscal 1993 due to increases in software license revenues in prior quarters and the completion of significant projects that were contracted or begun during late fiscal 1992. In addition, there was high demand from existing customers for "add-on" services, such as training or software customization. Revenues grew in North America and continental Europe, with increases of 34% and 39% over fiscal 1992, respectively.

Product development expenses were approximately \$11.3 million, \$9.1 million and \$9.0 million for fiscal 1993, 1992 and 1991, respectively.

Revenue for the six months ending December 31, 1993 was \$36.2 million, a 8% decrease from \$39.4 million for the same period in 1992. Net losses for the six months increased to \$8.2 million from a net loss of \$4.8 million for the same period the prior year.

- Results for the quarter ending December 31, 1993 include a restructuring charge of \$1.9 million and charges against accounts receivable of \$4.0 million.
- The company experienced unexpected delays in closing software license contracts in the second quarter. Factors contributing to these delays include: extended sales cycles and decision-

making for open systems products; very extended sales cycles for the PROMIX process manufacturing system partially due to prospective customer issues concerning a patent infringement suit; and a continued sluggish European economy.

Market Financials

Ross Systems' fiscal 1993 revenue was derived from clients in industry and government. Ross Systems' products are primarily used in mid-sized companies and larger organizations.

PROMIX is targeted to process manufacturers in industries such as food

and beverages, chemicals, pulp and paper products and pharmaceuticals. PROMIX has a worldwide installed base of more than 100 sites.

COMMAND is targeted to discrete manufacturers.

Approximately 67% of Ross Systems' fiscal 1993 revenue was derived from software products and associated maintenance services and 33% from consulting and training professional services. A three-year summary of source of revenue follows:

Ross Systems, Inc.
Three-Year Source of Revenue Summary
(\$ Millions)

Product/Service	Fiscal Year					
	6/93		6/92		6/91	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Software licenses	\$38.2	42%	\$35.3	47%	\$29.1	48%
Maintenance	21.9	25%	17.4	23%	12.9	21%
Consulting and other	29.0	33%	22.8	30%	19.0	31%
Total	\$87.1	100%	\$75.5	100%	\$61.0	100%

For fiscal 1993, approximately 14% of software license was from Renaissance CS, 5% from Human Resource CS, 30% from PROMIX process and distribution products, 8% from GEMBASE and 43% from earlier generation, COBOL-based Renaissance products and traditional human resources products.

Geographic Markets

Approximately 58% of Ross Systems fiscal 1993 revenue was derived from the U.S., 31% from Europe and 11% from other export sales.

A three-year geographic financial summary, as provided by Ross Systems, follows:

Ross Systems, Inc.
Three-Year Geographic Source of Revenue Summary
 (\$ Millions)

Geographic Area	Fiscal Year					
	6/93		6/92		6/91	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Revenue						
- North America	\$59.7	69%	\$45.9	61%	\$42.0	69%
- Europe	21.9	31%	17.4	39%	19.1	31%
TOTAL	\$87.1	100%	\$75.5	100%	\$61.0	100%
Operating earnings (loss)						
- North America	\$(2.6)	*	\$1.7	27%	\$3.3	77%
- Europe	2.1	*	4.7	73%	1.0	23%
TOTAL	\$0.5	100%	\$6.4	100%	\$4.3	100%

* Not meaningful

Acquisitions

In August 1991, Ross Systems acquired Pioneer Consulting Group, Ltd. in a pooling-of-interests transaction for approximately 793,000 shares in Ross Systems common stock.—or approximately \$9.3 million.

- Pioneer was a U.K.-based supplier of manufacturing systems and 4GLs for DEC computers. Its products include the PROMIX™ series of process manufacturing applications, the Command™ series for discrete manufacturers and the GEMBASE™ relational 4GL for Rdb/VMS applications.
- At the time of the acquisition Pioneer had more than 1,000 products installed worldwide with more than 300 customers.
- Pioneer had close to 30 employees at the time of the acquisition and revenue of

approximately \$11 million for the fiscal year ending October 31, 1990.

- The operations of Pioneer have been merged into Ross Systems and all prior financials have been restated.

In September 1990, in order to integrate the operations of its independent European distributors, Ross Systems purchased Ross Computer Software B.V., Ross Systems Nederland B.V. and Ross Systems France S.A. (Ross Systems Europe), distributors of Ross Systems products in continental Europe.

In January 1990, Ross Systems purchased the principal assets of Argonaut Information Systems' Inc. of California (AIS), a company that developed and marketed human resource applications software products for DEC VAX systems.

June 1989, Ross Systems acquired Cardinal Data Corporation of Needham

Ross Systems, Inc.

April 1994

Heights (MA). Cardinal Data, with 50 employees, provided accounting and distribution application software and associated support services for DEC VAX systems.

Employees

As of June 30, 1993, Ross Systems had 685 full-time employees, segmented as follows:

Marketing and sales.....	153
Product development.....	137
Professional services and customer support.....	320
Management and other.....	<u>75</u>
	685

Currently the company has approximately 600 employees.

Key Products and Services

Ross Systems markets a range of business applications software that addresses the financial, distribution, manufacturing and human resource needs of corporations, government, nonprofit agencies and other information-intensive institutions. The company has licensed approximately 9,000 software products to more than 2,000 customers worldwide.

Ross Systems current software products are summarized in the exhibit.

The Renaissance CS Financial Series is an open systems client/server set of integrated accounting products designed for use in a worldwide environment.

Human Resource CS is an open systems client/server suite of human resource management applications.

PROMIX Process Manufacturing Series applications totally integrate all phases of process manufacturing—from the factory floor through the accounting department. PROMIX is available for DEC's OpenVMS and VMS, OSF/1, HP's HP/UX and MPE/iX and plans for IBM's AIX and Microsoft's Windows NT.

PROMIX Distribution Series support all phases of distribution—from sales orders through resource planning and sales forecasting.

The COMMAND series product line, acquired with Pioneer in 1991, is targeted to discrete manufacturers.

The Public Sector product, introduced in 1991, is a user-defined budget tracking and control system that includes general ledger, accounts payable and purchase order applications.

Ross Systems also sells the following products that complement its other products:

- GEMBASE is a powerful 4GL application development environment. GEMBASE 5.1, announced in December 1993, is designed for midrange open system solutions and offers developers a database-independent environment, supporting relational database products such as Oracle, Ingres and Rdb. GEMBASE applications also can be designed to run on PCs and terminals. In addition to providing a development environment for new client/server solutions, GEMBASE also supports legacy systems.

Exhibit
Ross Systems, Inc.
Renaissance
Applications Software Products

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
Renaissance CS Financial Series - General Ledger - Accounts Receivable - Accounts Payable - Purchase Order - Fixed Assets - Budgetary Control - Currency Management - Cost Allocations - Desktop Budgeting - Desktop EIS - Desktop Results - Job Costing	PROMIX Process Manufacturing Series - Processing Planning - Process Manufacturing - Process Costing - Inventory Control - Warehouse Management - Purchase Order Processing - Sales Order Processing - Sales Analysis - General Ledger - Accounts Payable - Accounts Receivable - Fixed Assets
Distribution Series - Sales Order Processing - Sales Analysis - Accounts Receivable - Inventory Control - Warehouse Management - Purchase Order Processing - Sales Forecasting - Distribution Resource Planning	COMMAND - MRP - Work Order Processing - Master Production Scheduling - Capacity Planning - Distribution - Financials
Human Resource CS Series - Payroll - Human Resources	Public Sector Series - Public Sector

- CrossView Plus™ is a cross-product inquiry and reporting tool that allows simultaneous retrieval of information from Ross Systems' financial applications.

Professional and Support Services:

Ross Systems' Client Services division provides implementation and ongoing support to its clients. Services include education and training, software support and professional services.

- The Professional Services organization provides business application experience, DEC technical expertise and product knowledge to complement its products and provide solutions to a client's business requirements through the following services:

- Management Consulting involves an in-depth analysis of the client's specific needs and the preparation of detailed plans that list step-by-step actions and procedures necessary to achieve a timely and successful implementation of Ross Systems' software products. These services are generally offered on a time-and-materials basis.
- Applications Consulting evaluates and manages the client's needs through supplying custom systems, custom interfaces, data conversions and system conversions. These consultants participate in a range of activities, including requirements definition and software design, development and implementation. These services are generally offered on a time-and-materials basis.

- Training is offered to clients either at Ross Systems' education facilities or at the client's site, for either standard or customized classes. These classes are priced at either fixed daily rates or on a per-class basis. Training facilities are located in New York (NY), Redwood City (CA), Atlanta (GA), London and Hong Kong.

- Client Support, which includes telephone support and product enhancements, is provided under Ross Systems' standard maintenance agreement.

Marketing and Sales

Ross Systems sells its products and services through its direct sales force, joint marketing agreements and distributors.

Ross Systems has distribution agreements with distributors covering the Far East, the Middle East, Australia, Italy and Spain. These distributors market Ross Systems' products through offices in Abu Dhabi, Bangkok, Barcelona, Hong Kong, Kuala Lumpur, Madrid, Malaysia, Melbourne, Sydney, Taipei and Turin.

Alliances

Ross Systems has a number of marketing, sales and product development relationships with DEC and is a Digital Cooperative Marketing Partner.

Ross Systems has a close working relationship with HP for joint development and marketing. Ross Systems' financial, manufacturing, distribution and 4GL application development products operate with HP

hardware supporting the HP-UX and HP MPE/iX operating environments.

- Ross has received funding commitments from HP to assist in product development efforts, expansion of Ross Systems' HP-related sales efforts and implementation of related marketing plans.
- Ross Systems and HP also have a cooperative marketing arrangement whereby Ross Systems receives promotional assistance from HP.

Ross Systems and IBM also have a cooperative marketing arrangement whereby Ross Systems receives promotional assistance from IBM.

Ross Systems has established joint marketing agreements with Shared Medical Systems in the health care market and Campus America in the college and university market. These companies will offer the Ross Systems' financial products to their respective markets.

Ross Systems is marketing EDI management software—GENTRAN for the DEC VAX and GENTRAN for UNIX—from Sterling Software's Electronic Commerce Group.

Competitors

Business application software competitors include Oracle Systems Corporation, Dun & Bradstreet Software Services, ASK and Marcam Corporation.

In the human resources market, competitors include Cyborg Systems and PeopleSoft.

Assessment

Ross Systems' strengths include its client/server architecture, strong custom application development tools (GEMBASE), broad product line and good acquisition track record.

Challenges for Ross Systems include:

- Facing increasing competition from many other vendors that have released client/server versions of their products
- Changing the market perception of Ross Systems to be viewed as a client/server, open systems company. Can Ross keep the loyalty of its historical DEC customer base while gaining market share for its other supported UNIX platforms?

COMPANY PROFILE

**ROSS SYSTEMS,
INCORPORATED**
555 Twin Dolphin Drive
Redwood City, CA 94056
(415) 593-2500

Dennis Vohs, Chairman and CEO
Richard Giordanella, President and COO
Public Corporation, NASDAQ
Total Employees: 409 (12/90)
Total Revenue, Fiscal Year End
6/30/90: \$32,566,000

The Company

Ross Systems, Incorporated provides business application software products and associated support services to users of DEC computers.

- The company's Renaissance[®] family of products supports financial management, accounting, distribution, and human resources applications and is primarily used in midsized companies and divisions of larger companies, as well as government and nonprofit agencies and other information-intensive institutions.
- Ross Systems has a number of marketing, sales, and product development relationships with DEC and is a Digital Cooperative Marketing Partner.

Ross Systems' overall strategy is to build a broad-based DEC application software company through internal development and selective acquisitions; expand its domestic sales force and its relationship with DEC to multinational customers by establishing new international sales offices and distributor relationships; incorporate new technologies in its products, particularly those developed under DEC's NAS Strategy; and expand its service and support offerings to its customers.

- Ross Systems was founded in 1972 to provide consulting professional services. In 1975 the company expanded its business to include software products and processing services.
- In November 1988, Ross Systems announced a management buyout of the company for an undisclosed sum. The purchase was led by management and a group of outside investors led by Dennis Vohs. Other investors include Welsh, Carson, Anderson and Stowe; Citicorp; Morgan Stanley & Co.; and Greylock Management Corp.

- In June 1989, Ross Systems acquired Cardinal Data Corporation of Needham Heights (MA). Cardinal Data, with 50 employees, provides accounting and distribution application software and associated support services for DEC VAX systems.
- In January 1990, Ross Systems purchased Argonaut Information Systems' (AIS) line of human resource application software products for DEC VAX systems.
- In September 1990, in order to integrate the operations of its independent European distributors, Ross Systems purchased Ross Computer Software B.V., Ross Systems Nederland B.V., and Ross Systems France S.A. (Ross Systems Europe), distributors of Ross Systems products in continental Europe.
- On April 26, 1991, Ross Systems made an initial public offering of 2.75 million shares of common stock. Net proceeds to the company (estimated at nearly \$25 million) will be used for repayment of debt and general corporate purposes.

Revenue for the nine months ending March 31, 1991 reached \$33.2 million, a 55% increase over \$21.4 million for the same period in 1990. Net income was \$554,000, compared to a net loss of \$5.3 million for the same period a year ago.

- Revenue growth reflects Ross' success in all three revenue areas: software product licenses, maintenance fees, and consulting charges. Revenues increased through Ross' direct efforts and its international distribution channels.
- Software license revenue increased 53% over the same period last year. The significant increase was attributed to both international and domestic business. Internationally, European subsidiaries and Asian distributors contributed approximately 42% of the nine-months revenue, an increase of approximately 12% over the prior period. Domestically, sales grew through increases in the direct sales force, and increases in sales of the human resource and payroll products.
- Maintenance fees increased 86% over the nine-month period last year, due to an increase in the installed base of customers and products, and an annual increase in maintenance fees.
- Consulting services (which include training and consulting) increased by 46% over the prior nine-month period in conjunction with the increase in software sales.

Ross Systems' fiscal 1990 revenue was \$32.6 million, a 51% increase over fiscal 1989 revenue of \$21.6 million.

- Software license revenues increased 39% due to increased offerings of primarily distribution, payroll, human resource, and cost allocation products, as well as the expansion of Ross' direct sales force.
- A 66% growth in maintenance revenues from fiscal 1989 to fiscal 1990 reflected increases in the customer base and maintenance fee increases of approximately 6% during fiscal 1990.
- Consulting services increased by 76% over the prior year. This increase was largely attributed to increased consulting related to the new distribution products.
- The company's operating earnings before acquisition and amortization charges was \$3.6 million in fiscal 1990, compared to \$2.2 million in fiscal 1989.
 - The acquisition and amortization charges are noncash expenses that arose from the company's management buyout and subsequent acquisition of the distribution and human resource product line.
- Ross' net losses in fiscal 1990 and 1989 were \$4.7 million and \$11.8 million, respectively. These losses were primarily due to the acquisition and amortization charges and interest expense from the company's debt incurred at the time of the buyout.
- Approximately 15% of fiscal 1990 revenue was spent on product development, compared with 16% of revenue in fiscal 1989.

As of December 31, 1990, Ross Systems had 409 full-time employees, segmented as follows:

Sales and marketing	96
Product development	76
Professional services and customer support	172
Management and other	<u>65</u>
	409

Major competitors include Oracle Systems Corporation, Dun & Bradstreet Software Services, and ASK Computer Systems.

Key Products and Services

A three-year summary of source of revenue is estimated as follows:

**ROSS SYSTEMS, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	6/90		6/89		6/88	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$19.6	60%	\$14.1	65%	\$11.3	67%
Maintenance	4.2	13%	2.5	12%	1.7	10%
Consulting and other	8.8	27%	5.0	23%	3.9	23%
TOTAL	\$32.6	100%	\$21.6	100%	\$16.9	100%

For the nine months ending March 31, 1991, approximately \$18.5 million (56% of revenue) was derived from software licenses, \$5.4 million (16% of revenue) from maintenance, and \$9.2 million (28% of revenue) from consulting and other services.

Ross Systems markets a range of business application software that addresses the financial, distribution, and human resource needs of corporations, government, nonprofit agencies, and other information-intensive institutions. The company has licensed approximately 3,400 software products to 800 customers worldwide.

Ross Systems' Renaissance line of software products is currently available for DEC's VMS operating system. Ross Systems is presently porting its products to the ULTRIX and UNIX SCO operating systems and is restructuring its programs to operate with DEC's Rdb relational data base.

The Renaissance line of products includes 14 integrated modules organized into three product series as follows:

- Ross Financial Series:
 - General Ledger
 - Accounts Receivable
 - Accounts Payable
 - Purchase Order

- Fixed Assets
- Encumbrance Accounting
- Currency Management
- Allocations
- Ross Distribution Series:
 - Sales Order Management
 - Inventory Control
 - Sales Analysis
 - Billing
 - Accounts Receivable
 - Purchase Order
- Ross Human Resources Series:
 - Payroll
 - Human Resources

Ross Systems also sells the following business productivity software modules that complement its Renaissance products:

- 20/20™, a spreadsheet and graphics application for multiuser computer systems from Access Technology, Inc.
- CrossView Plus™, a cross-product inquiry and reporting tool that allows simultaneous retrieval of information from Ross Systems' accounting applications
- Microlink™, a PC-to-VAX link that permits users to transfer financial data between PC-based spreadsheets and centralized VAX-based general ledger or model financial data bases
- Model, a financial modeling tool for financial planning, forecasts, and budgeting
- Job Costing, a job cost accounting product from Breuer & Co.
- Commander, Comshare's executive information system
- RAXMASTER and RAXMANAGER system management and performance utility software from RAXCO Software Inc.
- SmartStar's fourth-generation language

As a result of the acquisition of Cardinal in 1989, that subsidiary also continues to offer certain financial and distribution products for Hewlett-Packard computers.

Ross Systems' Client Services division provides implementation and ongoing support to its clients. Services include education and training, software support, and professional services.

- The Professional Services organization provides business application experience, DEC technical expertise, and product knowledge to complement its products and to provide solutions to a client's business requirements through the following services:
 - Management Consulting involves an in-depth analysis of the client's specific needs, and the preparation of a detailed plan that lists step-by-step what needs to be done to achieve a timely and successful implementation. These services are generally offered on a time-and-materials basis.
 - Applications Consulting evaluates and manages the client's needs through supplying custom systems, custom interfaces, data conversions, and system conversions. These consultants participate in a wide range of activities, including requirements definition, software design, development, and implementation. These services are generally offered on a time-and-materials basis.
 - Training is offered to clients either at Ross Systems' education facilities or at the client's site, for either standard or customized classes. Video-based instruction is also available. These classes are priced at either fixed daily rates or on a per-class basis. Training centers are located in Redwood City (CA), Boston, New York City, Paris, London, Brussels, Hong Kong, and Sydney.
- Client Support, which includes telephone support and product enhancements, is provided under Ross Systems' standard maintenance agreement.

Industry Markets

Ross Systems' fiscal 1990 revenue was derived from clients in industry and government. Many of Ross Systems' product installations are at the headquarters of, or in a division of, a Fortune 500 company.

Customers include Apple Computer, British Telecom, Colgate-Palmolive, Consilium, DEC, Genentech, Microsoft, Critical Care America, Union Bank of Switzerland, and W.R. Grace & Co.

**Geographic
Markets**

Approximately 78% of Ross Systems' fiscal 1990 revenue was derived from the U.S. The remaining 22% was derived from foreign operations and export sales--primarily in Europe, Canada, Australia, and the Far East.

- For the first nine months of fiscal 1991, 63% of revenue was derived from the U.S. and 37% from foreign operations and export sales.

Ross Systems has sales and support offices at its headquarters in Redwood City and in the metropolitan areas of Atlanta, Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New York City, Pittsburgh, Washington, D.C., Toronto, and Vancouver.

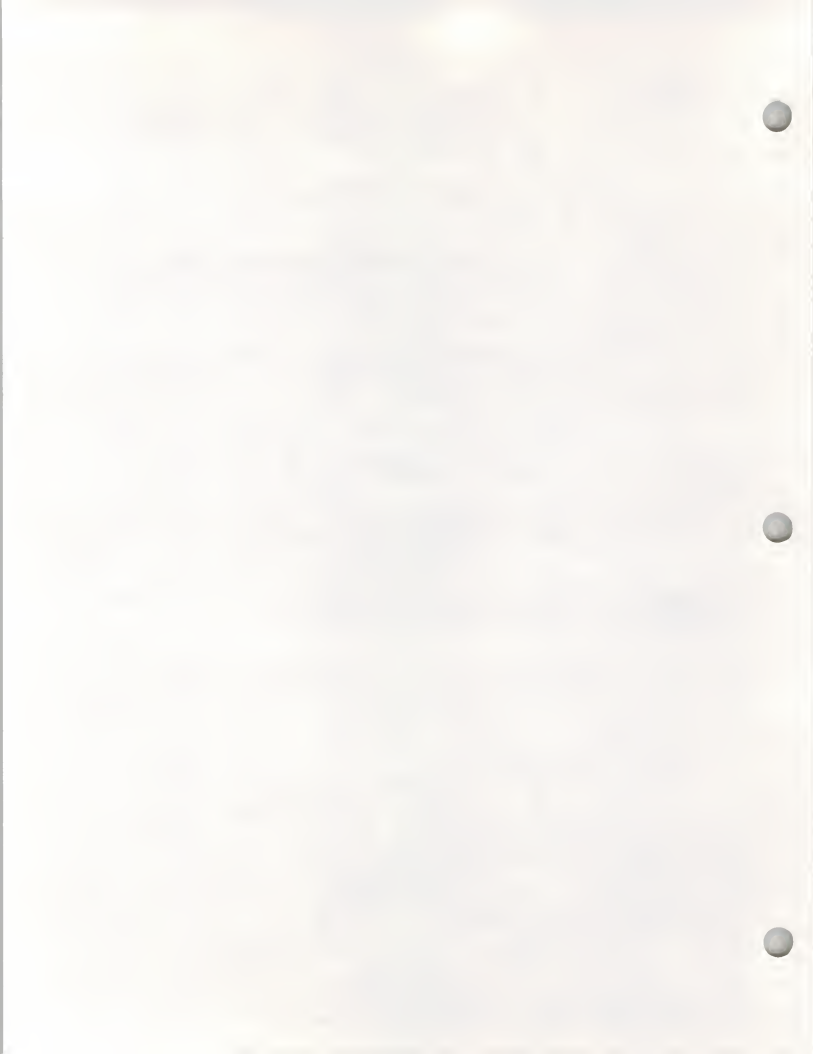
Ross Systems' international sales and support offices are located in Belgium, the U.K. (Bristol, England), France (Paris), and the Netherlands (Utrecht).

Ross Systems has entered into a distribution agreement with a distributor covering the Far East and Australia. This distributor markets and sells Ross System's products through offices in Bangkok, Hong Kong, Kuala Lumpur, Singapore, and Sydney.

The company has also entered into a distribution agreement with a distributor covering Spain and Portugal.

**Computer
Hardware and
Software**

Ross Systems has various DEC computers installed for product development and customer support.



COMPANY PROFILE

**ROSS SYSTEMS,
INCORPORATED**
1860 Embarcadero Road
Palo Alto, CA 94303
(415) 856-1100

Dennis Vohs, Chairman and CEO
Richard Giordanella, President
Private Corporation
Total Employees: 300 (3/90)
Total Revenue, Fiscal Year End
6/30/89: \$23,000,000

The Company

Ross Systems, Incorporated provides financial management, accounting, distribution, human resources, and business productivity application software products and associated support services exclusively for DEC VAX series computers. The company also provides education and consulting services and processing services.

Ross Systems' overall strategy is to build a broad-based VAX application software company by acquiring other companies offering complementary cross-industry or specific vertical market software products. Through a combination of accelerated internal growth and acquisitions, Ross Systems' target is to reach \$100 million in annual revenue by 1992.

- Ross Systems was founded in 1972 to provide consulting professional services. In 1975 the company expanded its business to include software products and processing services.
- Ross Systems operated as a private independent company through November 1986, when it merged with Virtual Microsystems of Berkeley (CA) to form ROSSDATA Corporation.
- In November 1988, ROSSDATA announced a management buyout of Ross Systems for an undisclosed sum. The purchase was led by management and a group of outside investors led by Dennis Vohs. Other investors include Welsh, Carson, Anderson and Stowe; Citicorp; Morgan Stanley & Co.; and Greylock Management Corp. Founder Kenneth Ross, also an investor, remains at Ross Systems as an advisor.
- In June 1989, Ross Systems acquired Cardinal Data Corporation of Needham Heights (MA). Cardinal Data, with

50 employees, provides accounting and distribution application software and associated support services for DEC VAX systems.

- In January 1990, Ross Systems purchased Argonaut Information Systems' (AIS) line of human resource application software products for DEC VAX systems.

Ross Systems' fiscal 1989 revenue reached an estimated \$23 million, a 31% increase over fiscal 1988 revenue of \$17.5 million. A three-year revenue summary follows:

**ROSS SYSTEMS, INCORPORATED
THREE-YEAR REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR		
	6/89	6/88	6/87
Revenue	\$23.0	\$17.5	\$11.2
• Percent increase from previous year	31%	56%	24%

Ross Systems management estimates that fiscal 1990 revenue will exceed \$36 million.

During fiscal 1989, software sales rose 21% and revenue from client services increased more than 50%.

During fiscal 1988, software sales rose 66%, revenue from client services increased more than 123%, and after-tax profit was nearly 20%.

Approximately 16% of fiscal 1989 revenue was spent on research and development.

Recent announcements made by Ross Systems include the following:

- In November 1989, Ross Systems and SmartStar Corporation announced a strategic partnership involving cooperative marketing and joint product development. SmartStar supplies the VAX community with a fourth-generation language applications development environment.

- In May 1989, Ross Systems announced a cooperative marketing agreement with Ingres Corporation under which the two companies will cooperatively market the INGRES toolset with Ross Systems' Renaissance Series of financial management and accounting software and will work to prototype an INGRES-based version of Renaissance applications for DEC's ULTRIX operating system.
- In March 1989, Ross Systems announced it will develop a VAX Rdb/VMS-based version of its Renaissance Series software in addition to its current RMS-based version. Ross Systems also announced support of DEC's Compound Document Architecture.

Major competitors include McCormack & Dodge (Dun & Bradstreet), Computer Associates, ISI, and Collier Jackson (CompuServe).

Key Products and Services

INPUT estimates that approximately 60% of Ross Systems' fiscal 1989 revenue was derived from application software products and 40% from services and support.

Ross Systems, with over 650 customers in 21 countries, currently has over 1,850 installations of its software products worldwide.

In October 1988, Ross Systems introduced the Renaissance SeriesTM product line for DEC VAX computers running under VAX/VMS. This next generation environment, which supercedes the company's MAPS family of financial products, integrates Ross Systems' "Mainframe Class" financial/accounting software products with business productivity tools. The Renaissance Series also allows the user to integrate any other VAX software into the system.

- Renaissance Series accounting applications are fully integrated and include the following:
 - Renaissance Series General Ledger (Renaissance/GL)
 - Renaissance Series Accounts Payable (Renaissance/AP)
 - Renaissance Series Purchase Order (Renaissance/PO)
 - Renaissance Series Accounts Receivable (Renaissance/AR)
 - Renaissance Series Fixed Assets (Renaissance/FA)

- Encumbrance Accounting, announced in June 1989, was co-developed with Price Waterhouse.
- Allocations, announced in August 1989, is a cost allocations accounting product co-developed with Microsoft.
- Intercompany Accounting, introduced in September 1989, facilitates the entry of transactions affecting multiple companies.
- Renaissance Series business productivity tools (Executive Information Systems) allow users to access, manipulate, report, and graph data from Ross Systems' accounting software and from PC-based spreadsheets. These tools include the following:
 - 20/20™, a spreadsheet for multiuser computer systems from Access Technology, Inc., integrates graphics, data base management, and project modeling with spreadsheet functionality. Ross Systems has nonexclusive rights to sell and support the 20/20 spreadsheet for use on VAX computers, and to train customers who purchase it.
 - CrossView™ is a cross-product inquiry and reporting tool that allows simultaneous retrieval of information from Ross Systems' accounting applications.
 - Microlink™, Ross Systems' PC-to-VAX link, permits users to transfer financial data between PC-based spreadsheets and centralized VAX-based general ledger or model financial data bases.
 - Model is a financial modeling tool that provides a range of features to allow the user to set up corporate financial models for planning, forecasting, budgeting, and other financial functions.

Ross Systems' Distribution Series™ products include the following:

- Distribution/SOM, a sales order management system
- Distribution/SA, an integrated sales analysis tool
- Distribution/AR, an accounts receivable system for effective receivables and credit management
- Distribution/PO, a customizable purchase order management system

- Distribution/IC, an inventory system integrated with SOM and PO for control and analysis of stores and products

Ross Systems' human resources applications, acquired from Argonaut Information Systems, include Payroll and Human Resources.

Ross Systems' Client Services Organization provides implementation and ongoing support to its clients. These services include education and training, software support, professional services, and processing services.

- Formal classroom training for the company's products and the VAX computer is provided on a regular basis, both in the U.S. and Europe.
 - Classes are held at Ross Systems' offices in Palo Alto, New York City, London, Brussels, Hong Kong, and Sydney. Customer site classes are also available.
- Professional services are offered in three categories:
 - Management Consulting provides high-level expertise in the implementation of a new accounting system.
 - Applications Consulting services include developing new systems or providing interfaces from existing in-house applications to the Ross product line.
 - Systems Consulting provides specific expertise in managing and operating DEC VAX computers.
- Clients may access Ross Systems' software products on DEC VAX computers located at Ross Systems' data center in Palo Alto.

Industry Markets

Ross Systems' fiscal 1989 revenue was derived from clients in various industries, including process and discrete manufacturing, banking and finance, media, telecommunications, and health care.

Nearly 30% of Ross Systems' product installations are at the headquarters or in a division of a Fortune 500 company.

Clients include DEC, Citicorp, Quaker Oats, Butler Manufacturing, Security Pacific, Ford, Scherring Plough, and Genentech.

In December 1988, Ross Systems signed a licensing agreement with The Saddlebrook Corporation granting Saddlebrook exclusive rights to sell and support Ross Systems' Renaissance Series of application products to thrift and mortgage banking institutions.

Geographic Markets

Approximately 88% of Ross Systems' fiscal 1989 revenue was derived from the U.S. The remaining 12% was derived from international sources, including Europe, Canada, Australia, and the Far East.

Ross Systems has North American offices in Atlanta (GA), Chicago (IL), Dallas (TX), Denver (CO), New York (NY), Nashua (NH), Needham Heights (MA), Palo Alto (CA), Pittsburgh (PA), and Toronto and Vancouver (Canada).

Ross Systems Europe, formed in April 1989 and headquartered in Brussels (Belgium), markets and supports Ross Systems' products throughout continental Europe. Other European offices are located in Bristol (England), Paris, and Utrecht (the Netherlands).

Ross Systems Asia, formed in July 1989 and headquartered in Hong Kong, markets and services Ross Systems products throughout the Far East. Offices are also located in Kuala Lumpur and Singapore.

Ross Systems Australia, with offices in Sydney and Melbourne, markets and supports Ross Systems products in Australia and New Zealand.

Computer Hardware and Software

Ross Systems has the following computers installed at its Palo Alto data center:

- 4 DEC VAX-11/780s, VMS
- 3 DEC PDP-11/70s, RSTS/E

Clients access the Palo Alto data center via ROSS/NET, the company's communications network, which provides direct access through dedicated lines from each of Ross Systems' regional offices, or through Telenet.

COMPANY PROFILE

ROSS SYSTEMS, INCORPORATED

1860 Embarcadero Road
Palo Alto, CA 94303
(415) 856-1100

Dennis Vohs, Chairman and CEO
Richard Giordanella, President
Private Corporation
Total Employees: 170
Total Revenue, Fiscal Year End
6/30/88: \$17,500,000

The Company

Ross Systems, Incorporated provides financial management and accounting application software products and associated support services exclusively for DEC VAX series computers. The company also provides education and consulting services and remote computing services for financial management.

- Ross Systems was founded in 1972 to provide consulting professional services. In 1975 the company expanded its business to include software products and processing services.
- Ross Systems operated as a private independent company through November 1986, when it merged with Virtual Microsystems of Berkeley (CA) to form ROSSDATA Corporation.
- In November 1988, ROSSDATA announced a management buyout of Ross Systems for an undisclosed sum. The purchase was led by management and a group of outside investors led by Dennis Vohs. Other investors include Welsh, Carson, Anderson and Stowe; Citicorp; Morgan Stanley & Co.; and Greylock Management Corp. Founder Kenneth Ross, also an investor, will remain at Ross Systems as an advisor.

Ross Systems' fiscal 1988 revenue reached an estimated \$17.5 million, a 56% increase over fiscal 1987 revenue of \$11.2 million. During fiscal 1988, software sales rose 66%, revenue from client services increased more than 123%, and after-tax profit was nearly 20%.

Approximately 16% of fiscal 1988 revenue was spent on research and development.

As of June 30, 1988, Ross Systems had 158 employees. The company currently has 164 employees, segmented as follows:

Sales/marketing	48
Consulting/support services	50
Product development	44
Computer operations	6
General and administrative	<u>16</u>
	164

Major competitors include McCormack & Dodge, Computer Associates, ISI, and Collier Jackson.

Key Products and Services

INPUT estimates that approximately 78% of Ross Systems' fiscal 1988 revenue was derived from application software products and associated support services, 15% was derived from professional services, and the remaining 7% was derived from processing services.

Ross Systems, with over 450 customers in 21 countries, currently has over 1,500 installations of its software products worldwide.

In October 1988, Ross Systems introduced the Renaissance Series™ product line for DEC VAX computers running under VAX/VMS. This next generation environment, which supercedes the company's MAPS family of financial products, integrates Ross Systems' "Mainframe Class" financial/accounting software products with business productivity tools. The Renaissance Series also allows the user to integrate any other VAX software into the system.

- Renaissance Series accounting applications are fully integrated and include the following:
 - Renaissance Series General Ledger (Renaissance/GL)
ranges in price from \$30,000 to \$74,000.

Renaissance Series Accounts Payable (Renaissance/AP)
ranges in price from \$23,000 to \$58,000.
 - Renaissance Series Purchase Order (Renaissance/PO)
ranges in price from \$23,000 to \$58,000.
 - Renaissance Series Accounts Receivable (Renaissance/AR)
ranges in price from \$23,000 to \$58,000.

- Renaissance Series Fixed Assets (Renaissance/FA) ranges in price from \$20,000 to \$47,000.
- Renaissance Series business productivity tools (Executive Information Systems) allow users to access, manipulate, report, and graph data from Ross Systems' accounting software and from PC-based spreadsheets. These tools include the following:
 - 20/20TM, a spreadsheet for multiuser computer systems from Access Technology, Inc., integrates graphics, data base management, and project modeling with spreadsheet functionality. Ross Systems has nonexclusive rights to sell and support the 20/20 spreadsheet for use on VAX computers, and to train customers who purchase it. 20/20 is priced from \$3,500 to \$13,200, depending on the CPU and options selected.
 - CrossViewTM is a cross-product inquiry and reporting tool that allows simultaneous retrieval of information from Ross Systems' accounting applications. CrossView is priced from \$9,000 to \$17,000, depending on the CPU.
 - MicrolinkTM, Ross Systems' PC-to-VAX link, permits users to transfer financial data between PC-based spreadsheets and centralized VAX-based General Ledger or Model financial data bases. Microlink is priced from \$7,000 to \$16,000, depending on the CPU.
 - Model is a financial modeling tool that provides a range of features to allow the user to set up corporate financial models for planning, forecasting, budgeting, and other financial functions. Model is priced from \$16,500 to \$42,000, depending on the CPU.

Ross Systems' Client Services Organization provides implementation and ongoing support to its clients. These services include education and training, software support, professional services, and network services.

- Formal classroom training for the company's products is provided on a regular basis, both in the U.S. and Europe.
 - Classes are held at Ross Systems' offices. Customer site classes are also available.
- Professional services are offered in three categories:

- Management Consulting provides high-level expertise in the implementation of a new accounting system.
- Applications Consulting services include developing new systems or providing interfaces from existing in-house applications to the Ross product line.
- Systems Consulting provides specific expertise in managing and operating DEC VAX computers.
- Clients may access Ross Systems' financial software products on DEC VAX computers located at Ross Systems' data center in Palo Alto.

Industry Markets

Ross Systems' fiscal 1988 revenue was derived approximately as follows:

Process manufacturing	20%
Discrete manufacturing	17%
Banking and finance	15%
Media	9%
Telecommunications	5%
Health care	5%
Other	<u>29%</u>
	100%

Over 40% of Ross Systems' clients are Fortune 500 companies.

Clients come from a range of industries and include Digital Equipment Corporation, Citicorp, Quaker Oats, Butler Manufacturing, Security Pacific, Ford, Scherring Plough, and Genentech.

In December 1988, Ross Systems signed a licensing agreement with The Saddlebrook Corporation granting Saddlebrook exclusive rights to sell and Support Ross Systems' Renaissance Series of application products to thrift and mortgage banking institutions.

Geographic Markets

Approximately 88% of Ross Systems' fiscal 1988 revenue was derived from the U.S. The remaining 12% was derived from international sources, including Europe, Canada, Australia, and the Far East.

Ross Systems has regional offices in Atlanta (GA), Chicago (IL), New York (NY), Palo Alto (CA), Nashua (NH), Dallas (TX), and Toronto (Canada).

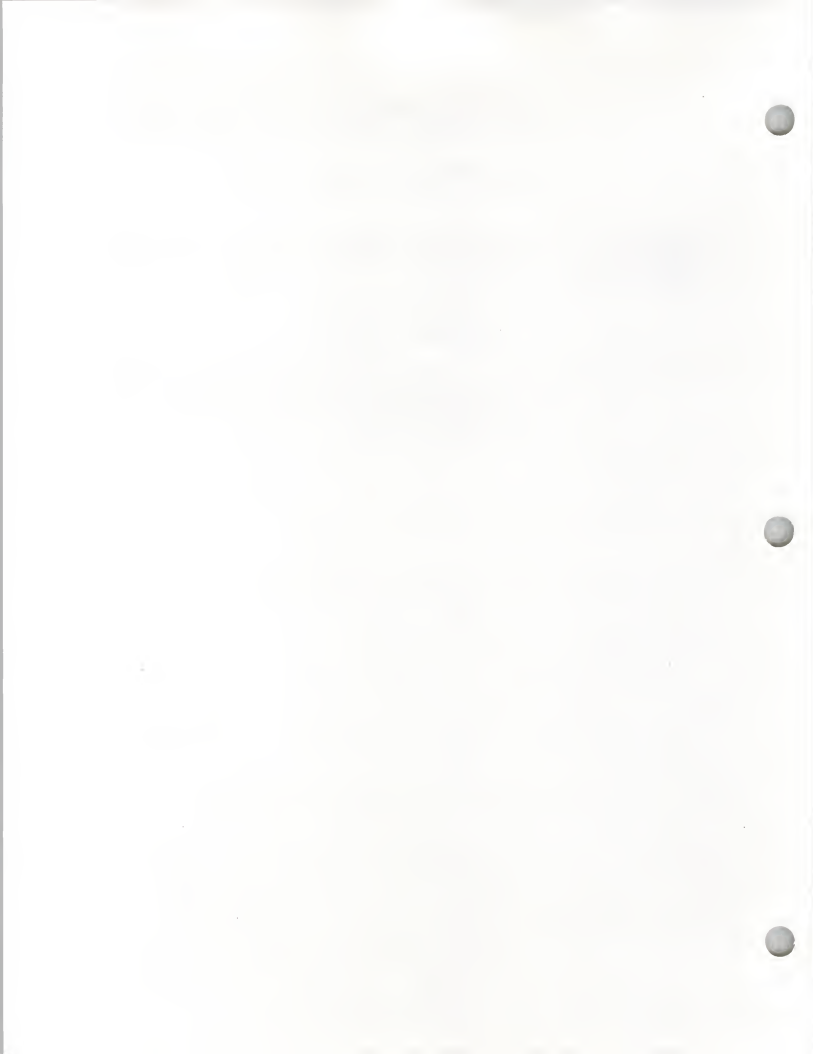
The company's European headquarters is located in Bristol (U.K.).

**Computer
Hardware and
Software**

Ross Systems has the following computers installed at its Palo Alto data center:

- 4 DEC VAX-11/780s, VMS.
- 3 DEC PDP-11/70s, RSTS/E.

Clients access the Palo Alto data center via ROSS/NET, the company's communications network, which provides direct access through dedicated lines from each of Ross Systems' regional offices, or through TYMNET.



COMPANY BRIEF

Cross Industry: Accounting and Financial

Ross Systems Inc.

1860 Embarcadero Road
Palo Alto, CA 94303
(415) 856-1100

CEO: Richard Giordanella, President
Subsidiary of: ROSSDATA Corporation
Founded: 1972

Employees: 100 (11/86), 80 (6/86)
Revenue (FYE 6/30/86): \$10,000,000

The Company: Ross Systems Inc. provides accounting and financial software and other application software, systems software, processing services, and professional services for DEC VAX equipment

Sources of Revenue:

- Application Software (70%)
- Systems Software (10%)
- Processing Services (10%)
- Professional Services (10%)

Key Products and Services:

- Application Software (Utilizes DEC VAX computers)
 - MAPS/GL, general ledger system
 - MAPS/AP, accounts payable system
 - MAPS/AR, accounts receivable system
 - MAPS/FA, fixed assets system
 - MAPS/MODEL, financial model and budgeting system
 - MAPS/GRAPH, business presentation graphics system
 - MAPS/ISO, incentive stock option and tracking system
 - MAPS/PRO, financial modeling and graphics system for DEC Professional 350
- Systems Software (Utilizes DEC VAX computers)
 - MAPS/MICROLINK, mini-to-micro link
 - MAPS/DB, data base management system
- Processing Services (Utilizes DEC VAX minicomputers)
 - Ross Systems Inc. makes its software available through processing services. In addition, the company provides timesharing services. Customers access Ross Systems' data center through either Tymnet or Rossnet, Ross Systems' proprietary network.

December 1986

- Professional Services:
 - Ross Systems Inc. modifies its off-the-shelf software and develops custom software for DEC VAX computers in order to meet specific customer requirements

Target Industries:

- Cross industry
- Targets mid-sized and Fortune 1000 companies

Geographic Markets:

- U.S.
- Non-U.S.
- 100% direct sales through its offices in San Mateo (CA), Nashua (NH), New York City, and the United Kingdom

Significant Events:

- On November 24, 1986, Ross Systems and Virtual Microsystems of Berkeley (CA) merged to form ROSSDATA Corporation. Both Ross Systems and Virtual Microsystems will continue to exist as separate operating companies, while ROSSDATA will provide organizational support.

December 1986

COMPANY HIGHLIGHT

ROSS SYSTEMS, INC.
1860 Embarcadero Road
Palo Alto, CA 94303
(415) 856-1100

Kenneth Ross, President
Private Corporation
Total Employees: 95
Total Revenue, Fiscal Year End
6/30/83: \$8,500,000

THE COMPANY

- Ross Systems, Inc. was founded in 1972 to provide consulting professional services. Since 1975 the company has expanded its business to provide software products and remote computing services for financial management.
- Fiscal 1983 revenue reached \$8.5 million, a 44% increase over fiscal 1982 revenue of \$5.9 million. A five-year revenue summary follows (\$ thousands):

ROSS SYSTEMS, INC.
FIVE-YEAR REVENUE SUMMARY

ITEM \ FISCAL YEAR	6/83	6/82	6/81*	6/80*	6/79*
Revenue	\$8,500	\$5,900	\$4,300	\$2,400	\$1,700
Percent increase from previous year	44%	37%	79%	41%	N/A

*Restated to reflect a change in accounting procedures.

- Ross Systems' management estimates fiscal 1984 revenue will exceed \$9 million.
- Approximately 12% of fiscal 1983 revenue was spent on research and development.
- As of June 30, 1983, Ross Systems had 95 employees. The company currently has 98 employees, segmented as follows:

Sales/marketing	25
Consulting/support services	25
Product development	15
Computer operations	20
General and administrative	<u>13</u>
	98

- Major competitors include McCormack and Dodge, Inc. and Software International Inc.

KEY PRODUCTS AND SERVICES

- Approximately 65% of Ross Systems' fiscal 1983 revenue was derived from remote computing services, 20% from software products, and 15% from professional services consulting.
 - The company provides financial software solutions for clients primarily in the banking and manufacturing industries.
 - Users typically are controllers, financial analysts, marketing managers, and other executives involved in accounting and planning functions.
- Ross Systems' MAPS^{T.M.} (Management, Accounting, and Planning Software) family of integrated financial management software products provides decision support tools and accounting applications for DEC computers. These products can be leased as packages or accessed via the company's ROSS/NET timesharing network, and include the following:
 - MAPS/MODEL^{T.M.}, introduced in 1975 as MAPS, is a matrix-based financial modeling tool that permits users to construct company-wide decision support models for financial forecasting, budgeting, strategic business planning, and tax analysis systems.
 - MAPS/MODEL also includes "what if" analysis, multilevel consolidations, and statistical analysis.
 - The software runs on DEC VAX-11 and PDP-11 series minicomputers and licenses from \$22,000 to \$30,000.
 - There are currently over 65 installations of MAPS/MODEL.
 - MAPS/GRAPH is a graphics software tool that illustrates the financial planning data generated by MAPS/MODEL.
 - It offers graphics for formal presentations, including line and bar charts representing financial time series, and budget variances.
 - MAPS/GRAPH runs on DEC VAX-11 and PDP-11 series minicomputers and licenses from \$3,000 to \$5,000.
 - There are currently 50 installations of MAPS/GRAPH.
 - MAPS/Pro^{T.M.}, introduced in 1982, is the version of MAPS/MODEL for use on DEC's Professional 350 personal computer.

- MAPS/Pro allows financial managers to work independently or interact with associates and a host computer in a distributed environment.
- Through compatible file formats and a built-in financial data base subsystem, MAPS/Pro facilitates the movement of models and financial data between a host computer and a micro, allowing users to build and maintain large-scale shared data bases of financial models and information.
- MAPS/Pro licenses for \$1,250 and annual maintenance fees are \$150. Volume discounts are available.
- There are over 300 MAPS/Pro systems currently licensed. It is marketed by Ross Systems and Digital Equipment Corporation.
- MAPS/PRO GRAPHICS is the graphics software tool for MAPS/Pro. It licenses for \$250.
- MAPS/DB^{T.M.}, introduced by Ross Systems in 1978 as INTAC, is an interactive data base management tool used in developing applications where there is a requirement to maintain, sort, and retrieve data.
 - The user may define and create files; add, change, and delete records; and report on the data.
 - MAPS/DB runs on DEC VAX-11 and PDP-11 series minicomputers and licenses for \$22,000 to \$30,000.
 - There are over 30 installations of MAPS/DB.
- MAPS/ISO, introduced in April 1983, is a comprehensive employee stock option system that manages and tracks all employee stock option plan information.
 - This accounting and tracking system meets all current legislative requirements for incentive stock options (ISO) and provides complete information for public, tax, and internal reporting of stock option programs.
 - MAPS/ISO runs on DEC VAX-11 minicomputers and licenses from \$52,000 to \$66,000.
- MAPS/GL^{T.M.}, introduced in July 1983, is an interactive general ledger/financial management system designed for DEC VAX minicomputers.
 - It features general ledger accounting, financial control, budgeting, and advanced reporting functions.

ROSS SYSTEMS, INC.

- MAPS/GL can be integrated with MAPS/MODEL to give the user full financial modeling capabilities with data from the general ledger.
- MAPS/GL licenses from \$22,500 to \$30,000. There are currently over eight installations.
- MAPS/AP^{T.M.}, to be introduced in May 1984, is an interactive accounts payable/cash management system designed for DEC VAX minicomputers.
 - It handles payables processing, check writing, vendor information, cash management, inquiries, and reports.
 - MAPS/AP can interface with MAPS/GL to automatically update payables to the general ledger.
 - MAPS/AP will license from \$15,000 to \$20,000.
- Ross Systems provides interactive remote computing processing services to over 500 users from 200 client companies.
 - Clients access MAPS software via ROSS/NET, Tymnet, or Uninet.
 - Network offerings are shown in the exhibit.
- Ross Systems provides professional services to over 100 client companies.
 - Clients typically are remote computing customers requiring consulting services and assistance in developing custom decision support systems using MAPS products.
- Future plans for Ross Systems include the following:
 - Expanding its current base of minicomputer software to include additional decision support and accounting applications (accounts receivable, fixed assets).
 - Converting its software to other operating environments.

INDUSTRY MARKETS

- Ross Systems' fiscal 1983 revenue was derived approximately as follows:

Banking and finance	20%
Discrete manufacturing	40
Process manufacturing	10
Other	<u>30</u>
	100%

EXHIBIT

ROSS SYSTEMS, INC.
NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME
● OPERATING ENVIRONMENT — DEC VAX-11/780, VMS — DEC PDP-11/70, RSTS/E ● PROGRAMMING LANGUAGES — COBOL — FORTRAN — PASCAL — BASIC PLUS — BASIC PLUS II ● DATA MANAGEMENT SOFTWARE — MAPS/DB — RMS — DATATRIEVE ● FINANCIAL/MODELING — MAPS/MODEL — MAPS/PRO — MAPS/ISO — MAPS/GL — MAPS/AP ● GRAPHICS — MAPS/GRAPH — MAPS/PRO-GRAPHICS ● TEXT PROCESSING — DECWORD ● STATISTICS — BMDP — SYBIL/RUNNER

ROSS SYSTEMS, INC.

- The company's target market for its products and services is the finance department of medium-sized companies.

GEOGRAPHIC MARKETS

- Approximately 95% of Ross Systems' fiscal 1983 revenue was derived from the U.S. The remaining 5% was derived primarily from Europe and New Zealand.
- District offices are located in Dallas, Los Angeles, New York City, and San Francisco.

COMPUTER HARDWARE AND SOFTWARE

- Ross Systems has the following computers installed at its Palo Alto data center:
 - 4 DEC VAX-11/780s, VMS.
 - 3 DEC PDP-11/70s, RSTS/E.
- Clients access the Palo Alto data center via ROSS/NET, the company's communications network, which provides direct access through dedicated lines from each of its district offices, or through Tymnet or Uninet.

COMPANY HIGHLIGHT

ROSS SYSTEMS, INC.
1900 Embarcadero
Suite 208
Palo Alto, CA 94303
(415) 856-1100

Kenneth Ross, President
Private Corporation
Total Employees: 80
Total Revenue, Fiscal Year
End 6/30/81: \$5,000,000*

PRINCIPAL BUSINESS Ross Systems was founded in 1972 to provide management consulting. In 1975, the company expanded its business and began offering timesharing services and software products.

FINANCIALS (\$ thousands)

	6/81	6/80	6/79
Total revenue*	\$ 5,000	\$ 2,500	\$ 1,800

- Ross Systems estimates that FYE 1982 revenue will exceed \$7.5 million.
- Approximately 12% of revenue is spent annually on research and development.
- In November 1981, Ross Systems obtained \$1 million in financing which will be used for new product development and to improve computer facilities to provide more timesharing services.

SOURCES OF REVENUE

Processing services	70%
Professional services	16
Software products	12
Hardware sales	<u>2</u>
	100%

EMPLOYEES

- As of November 1981, Ross Systems had 80 employees, segmented as follows:

Sales/marketing	15
Consulting/support services	30
Product development	10
Computer operations	10
General/administrative	<u>15</u>
	80

*INPUT estimate

KEY PRODUCTS AND SERVICES

- Ross Systems provides financial decision support for management in manufacturing, business services, and banking, through packaged software systems, timesharing, and consulting.
 - Users typically are controllers, financial analysts, marketing managers, and other executives involved in planning.
- Ross Systems currently offers two proprietary DEC-compatible software packages and plans to add several others in 1982.
 - INTAC (Interactive Data Base Management) is a data management and retrieval system with over 25 installations. The system is priced at \$20,000 and is also available through timesharing.
 - MAPS (Management Aid for Planning Strategies) is a financial modeling and reporting language.
 - A major upgrade of MAPS was announced November 19, 1981, offering ease of use for the non-programmer, extensive screen formatting, prompts, "help" messages, and new financial functions.
 - Available to DEC RSTS/E and VMS users, MAPS is priced at \$20,000. The price includes a business graphics software package, customized line editor, user guides, 16 hours of consulting/education, and the first year's maintenance.
 - There are currently 35 installations.
 - MAPS is also available via timesharing.
 - Management expects MAPS will be available for a wide range of computers by the end of calendar 1982.
 - Ross Systems plans to offer a skeleton general accounting system the first quarter of 1982. The system, which will be available as software for DEC equipment and through timesharing, will include general ledger, accounts payable and receivable, and fixed assets.
 - Ross Systems is co-developing a cash management system with a major New York bank which is scheduled to be available some time in 1982.
- All of Ross Systems' processing is done via timesharing.
 - There are over 500 active users from 125 client companies.
 - Applications available are shown in the exhibit.

EXHIBIT

NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME
● Operating Environment — DEC PDP-11/70, RSTS/E — DEC VAX 11/780, VMS ● Programming Languages — COBOL — FORTRAN — PASCAL — BASIC PLUS — BASIC PLUS II ● Data Management Software — INTAC ● Accounting/Financial — General Ledger — Accounts Receivable — Accounts Payable — Fixed Assets ● Planning and Statistical — MAPS — BMDP ● Text Processing — DECWORD ● Graphics — Four-color, Time Series Business Graphics

ROSS SYSTEMS, INC.

- Ross Systems' management consulting focuses on the analysis, design, and implementation of financial planning and control systems and accounting sub-systems. Projects include:
 - Designing a management reporting and decision support system for the Mercantile Texas Corporation, tying together 19 unit banks while maintaining distinct financial sub-systems.
 - Co-developing a branch profitability system and an international performance reporting system with Crocker National Bank.
 - Developing a long-range financial planning, investment portfolio management system, and base line accounting system for CETUS Corp., a biotechnology company.

INDUSTRY MARKETS

Discrete manufacturing	27%
Banking and finance	25
Services	18
Process manufacturing	15
Other	15
	100%

GEOGRAPHIC MARKETS

United States	90%
Europe, New Zealand, Mexico	10%
	100%

- Branch offices are located in Dallas, Los Angeles, New York, and San Francisco.

COMPUTER HARDWARE

- Access to the Palo Alto data center is through an internal leased line network or through Tymnet, Telenet, or Uninet
 - 3 DEC PDP 11/70s, RSTS/E.
 - 3 DEC VAX 11/780s, VMS.
- Ross Systems has a fourth VAX 11/780 on order, with delivery scheduled for February 1982.

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

May 1996

RSA Data Security, Inc.

President & CEO: James Bidzos
100 Marine Parkway
Suite 500
Redwood City, CA 94065-1031
Phone: (415) 595-8782
Fax: (415) 595-1873
Internet: <http://www.rsa.com>

Status:	Private
Employees:	50 (5/96)
Revenue:	\$11,600,000
Fiscal Year End:	12/31/95

Key Points

- RSA Data Security (RSA) is a leading provider of public-key encryption security software and services. Founded in 1982, the company's technologies have since grown to become *de facto* standards for data encryption and authentication worldwide.
- The RSA Public Key Cryptosystem, in its various forms, has been endorsed by the Internet, the Pentagon, and financial institutions worldwide, and counts nearly every major computer hardware and

software corporation among its many licensees.

- RSA's encryption technology has been incorporated into the systems and software of a range of vendors, including Lotus, Microsoft, Intuit, Motorola, Apple, and AT&T.
- In April 1996, RSA and Security Dynamics Technologies, Inc. announced that Security Dynamics will acquire RSA in a pooling-of-interests transaction.
- In July 1995, Netscape, Microsoft, Lotus, Banyan, VeriFone, VeriSign, NCD, ConnectSoft, Demming, QUALCOMM, Frontier Technologies, FTP Software, Wollongon, SecureWare, and others

announced support for the S/MIME standard for secure, multivendor E-mail products. This specification uses RSA encryption technology.

- In February 1996, Visa International and MasterCard, along with IBM, Microsoft, Netscape, RSA, and others, announced a new specification for securing credit card transactions on the Internet. This new specification—Secure Electronic Transactions (SET)—uses RSA encryption technology.
- In February 1996, RSA announced its intention to deliver a SET toolkit later in 1996, allowing developers of client, server, and acquirer products to quickly integrate SET services in their applications.
- In February 1996, RSA established Nihon RSA, a wholly owned subsidiary to market the company's full suite of encryption technology products in Japan.
- In January 1996, RSA announced that the government of the People's Republic of China will use and distribute RSA products in China.

Company Description

RSA develops and markets platform-independent software developers' kits and end-user products, and provides consulting services in the cryptographic sciences. There are more than 250 RSA partners making RSA-enabled products and more than 60 million copies of RSA encryption and authentication technologies installed and in use worldwide.

- BSAFE™, BCERT™, and S/MIME™ are RSA's software developers' toolkits for integrating privacy and authentication features into applications.

- RSA Secure™ is RSA's file system security extension, available for Macintosh, Windows 3.1, Windows 95, and Windows NT environments.
- RSA's encryption technology is embedded in Microsoft Windows, Netscape Navigator, Intuit's Quicken, Lotus Notes, and hundreds of other products.
- RSA technologies are part of existing and proposed standards for the Internet and World Wide Web, CCITT, ISO, ANSI, and IEEE, as well as business, financial, and electronic commerce networks around the globe.

RSA technology was invented in 1977 at MIT by Professors Ronald Rivest, Adi Shamir, and Len Adleman, who subsequently founded RSA.

In April 1996, RSA and Security Dynamics Technologies, Inc. announced a definitive agreement for Security Dynamics to acquire RSA for four million shares of Security Dynamics common stock valued at approximately \$200 million.

- Security Dynamics, based in Cambridge (MA), is a public company that provides security products that protect and manage access to computer-based information resources. Security Dynamics reported revenue of \$33.8 million and net income of \$5.8 million for calendar 1995.
- The acquisition will be accounted for as a pooling of interests. Security Dynamics has announced its intent to operate RSA as a distinct subsidiary.
- The transaction is expected to close in June 1996.

Organization and Structure

RSA is headquartered in Redwood City (CA). The company also has an office in Annapolis (MD) to support its export consulting services.

RSA Laboratories, formed in 1990, is a completely independent division of RSA that provides security reviews, custom development, and education services related to cryptography. RSA Laboratories, with approximately 60 employees, is based in Redwood City.

Nihon RSA, a wholly owned subsidiary of RSA, was established in early 1996.

- Headquartered in Tokyo, Nihon RSA provides developers in Japan with access to RSA's suite of encryption technology, including RSA's BSAFE and S/MIME toolkits.
- RSA and its consultant, Asian Pacific Ventures Co. of Menlo Park (CA) will invite a limited number of Japanese companies to become investors in Nihon RSA.

Terisa Systems is a joint venture between RSA and Enterprise Integration Technologies formed to create a universal approach to Internet security.

RSA's key executives are listed below:

RSA Key Executives

Name	Title
James Bidzos	President and CEO
Scott Schnell	VP Marketing
C. Victor Chang	VP Engineering

Company Strategy

RSA has unveiled its strategic vision in the form of a next-generation architecture—the

Layered Open Crypto Toolkit (LOCT™)—which is designed to be a road map for future security solutions from RSA and its vendor partners.

- LOCT provides developers with a more open, extensible, and flexible environment enhancing security and ease of use.
- LOCT's architecture has four layers, including application-specific tools, token interface, cryptography engine, and certificate engine. This architecture reportedly reduces redundancy in separate toolkits and applications, and enables developers to build cryptography applications with lower overhead, smaller code size, and decreased memory requirements.
- RSA is working with VeriSign to enable and promote the new LOCT architecture.

Other elements of the company's strategy include:

- Aggressive development of new, high level toolkits supporting emerging multivendor standards in secure E-mail, secure transaction, and secure wide-area and remote networking segments
- Strong RSA brand development around key licensed products
- Expansion into worldwide markets through specialized, exportable toolkit products

Financials

RSA's 1995 revenue was \$11.6 million and net income was approximately \$950,000.

Market Financials

RSA's revenue is derived primarily from hardware and software vendors, software

developers, and OEMs that bundle RSA's technology with their own products.

Geographic Markets

INPUT estimates that approximately 95% of RSA's 1995 revenue was derived from the U.S. and 5% from international sources, primarily Europe.

RSA has a foreign distribution agreement with Computer Security Limited in the U.K.

Agreements formed in early 1996 have expanded the distribution of RSA's products to Japan and China.

Divestitures

In June 1995, RSA spun off its Certificate Services division to form VeriSign, Inc.

- VeriSign, now based in Mountain View (CA), was formed with the financial backing of a diverse group, including Ameritech, Bessemer Venture Partners, Mitsubishi, RSA, Security Dynamics, and Visa International.
- VeriSign provides digital ID products and services for both public and private networks that use public-key cryptography to provide security, privacy, and authentication for the electronic commerce marketplace.

Employees

As of December 31, 1995, RSA had approximately 40 employees. The company currently has about 50 employees, segmented as follows:

Marketing and sales.....	12
Customer support.....	3
Research and development.....	25
General and administrative.....	10
	50

Key Products and Services

RSA designs, develops, and markets digital privacy and authentication systems for OEMs and end users.

RSA's products are based on its patented technology that allows privacy and/or authentication of stored or transmitted data without secret-key sharing.

- The systems work using distinct, paired keys. One is made public and the other is not.
- Encryption based on the public key can be undone only by the holder of the corresponding private key.
- For authentication, files "signed" using private keys are traceable to the signers and contain "tamper-detection seals."
- The RSA Digital Signature employs a cryptographic "hashing" algorithm to create a message digest that is unique to each document.

BSAFE is a low-level, general-purpose C toolkit, suitable for a range of applications requiring privacy or authentication. It provides developers with multiple algorithms and modules for adding encryption and authentication features to any application.

- BSAFE modules can be used to construct anything from RSA Digital Signatures to complex key exchange or negotiation schemes.
- BSAFE was used to provide the cryptography built into applications such as Novell NetWare, Netscape Navigator, Lotus Notes, WordPerfect InForms, Digital Internet Tunnel, Oracle SQL*Net, and Microsoft Windows NT.

- BSAFE is available for DOS, Windows, Windows 95, Windows NT, OS/2, Macintosh, AT&T SVR4 UNIX, HP/UX, SunOS, Solaris, IBM AIX, NeXT, Silicon Graphics, SCO UNIX, Alpha VMS, and VAX/VMS platforms, with ports to other platforms available.

S/MIME is specifically designed for messaging, mail, and EDI application development. It embraces the Internet's S/MIME standard for secure electronic mail and messaging and is designed to fully use Internet, PKCS, and X.509 certificates.

- Because the standard cryptographic constructs are built right into the toolkit, they do not have to be constructed by the developer out of their base algorithms, potentially saving months of development work.
- S/MIME is available for DOS, OS/2, PC SVR4 UNIX, MacOS, SunOS, Solaris, HP/UX, IBM AIX/6000 and other platforms.

BCERT is RSA's toolkit for developers who need to add X.509 certificate functionality to a range of applications.

- The BCERT library includes all the necessary function calls to build complete certificate authority engines, including certificate creation, certificate requests, and certificate revocation lists.
- BCERT supports the CCIT X.509 standard, and handles version 1, 2, and 3 certificate extensions.
- BCERT features an object-oriented API using data abstraction for more efficient development. BCERT is also re-entrant, so it can be shared by many applications at once, supporting advanced multitasking operating environments.

RSA's SET Toolkit Suite is specifically designed to aid in the development of applications supporting the SET (Secure Electronic Transaction) standard for payment card transactions as developed by Visa, MasterCard, RSA, and others.

- The RSA toolkits will fully support all the SET standard elements, including RSA, SHA1, DES, and X.509v3 certificates, and include object encryption modules for worldwide exportability.
- The RSA SET Toolkits include fully functional client and merchant server modules, with partial source code for developer customization.
- RSA SET Toolkits are planned for Windows, Windows 95, NT, and Macintosh clients, NT and UNIX servers, and NT and UNIX acquirer platforms.

RSA Secure is a disk encryption utility to protect sensitive information on a PC or network.

- RSA Secure can be used to define sets of files and directories or folders that are automatically encrypted and decrypted every time the user goes in or out of Windows, or shuts down or starts up a Macintosh.
- RSA Secure is available for Windows or Macintosh and also in an international version. Versions for Windows 95, Windows NT, and UNIX are under development.

RSA Laboratories

RSA Laboratories was split off from RSA in 1990 in order to:

- Provide a productive environment for RSA's top mathematicians, away from the distractions of the product development and

marketing activities of the commercial arm of RSA

- Maintain the company's reputation in the fields of cryptographic research and algorithmic development
- Provide a purely technical (nonsales-oriented) resource for clients needing custom algorithms, optimizations, or security reviews and development

RSA Laboratories offers services in three general areas:

- *Security reviews:* RSA Laboratories offers security reviews of clients' products and proposals. With schematics and documentation, RSA can provide evaluations and suggest modifications of security schema from the algorithmic level to the policy level.
- *Custom development:* RSA uses encryption or authentication techniques such as DES, RSA, and RC4 and designs entirely new security techniques tailored to the unique needs of each client. The company maintains a library of assembly-level cryptographic code and has expertise with a range of hardware and operating environments.
- *Education:* RSA Laboratories continually publishes technical reports covering the latest advances in cryptography. In addition, the company occasionally brings together top developers and researchers for industry-sponsored cryptographic seminars. Clients can learn about the latest developments in the field and how they might affect future product plans or marketing efforts.

Export Consulting Services

RSA's export consulting services are designed to make it easier for developers to maneuver in Washington's bureaucratic export licensing maze. Services include:

- Product export assessment and reporting
- Export licensing assistance
- Predevelopment product export liaison services

Clients/Partners

More than 250 companies are making RSA-enabled products and services, including Adobe, Alcatel, Apple, AT&T, Atari, Bankers Trust, Broadvision, Collabra Software, CompuServe, Connect, ConnectSoft, Delrina, Digital Equipment Corporation, GE Information Services, Intuit, General Magic, Hewlett-Packard, Hughes Aircraft, IBM, I-NET, Lotus, MCI, Michigan State University, Microsoft, MIT, Motorola, National Semiconductor, NEC, Netscape, Network Systems Corporation, Newbridge Networks, Northern Telecom, Novell, Oracle, PCSI, Pitney Bowes, PIXAR, Premenos, Racal-Datcom, Retix, Rockwell International, Semaphore, Sierra Wireless, Spry, Spyglass, Symantec, SunSoft, Terisa Systems, Trusted Information Systems, Unisys, VLSI Technologies, V-ONE Corporation, and WordPerfect.

In December 1995, Intuit announced that by the second half of 1996 it plans to offer banking with participating financial institutions via the Internet, featuring security based on RSA Data Security encryption.

In October 1995, RSA announced that Motorola had incorporated RSA's encryption technology into Signet, Motorola's family of

digital signature and encryption software products.

In September 1995, RSA signed a distribution agreement with Spyglass, Inc. allowing Spyglass to sublicense its Enhanced Mosaic and Spyglass Server software products bundled with RSA technology to its volume customers. The agreement broadens RSA's distribution by tapping Spyglass' network of customers and other partners. These include OEMs, VARs, and distributors who embed Spyglass technology in the products they sell, such as Corel, Digital Equipment Corporation, FTP Software, IBM, NEC, Oracle, NTT, and Siemens Nixdorf.

Marketing and Sales

RSA sells its products and services through a direct sales force.

Alliances

In January 1996, the Computing Center of the Ministry of Foreign Trade and Economic Cooperation (MOFTEC) of the People's Republic of China and the Chinese Academy of Sciences Graduate School's Laboratory of Information Security (LOIS) were appointed RSA's exclusive representatives for RSA products in the People's Republic and there are plans for cooperative research and development between RSA and LOIS.

- MOFTEC is responsible for managing all importers and exporters in China, as well as key trading partners worldwide. RSA will deliver its RSA Digital Signature authentication technology, as well as data encryption technology as allowed by U.S. export law, to MOFTEC for use in securing its network.

- LOIS and MOFTEC will work to localize RSA products so they are suited to the Chinese market.
- LOIS will develop, in China, a new cryptographic implementation for RSA for use around the world. LOIS will also conduct research in areas of cryptography important to RSA and MOFTEC, including review of current RSA technology as well as new cryptographic techniques.

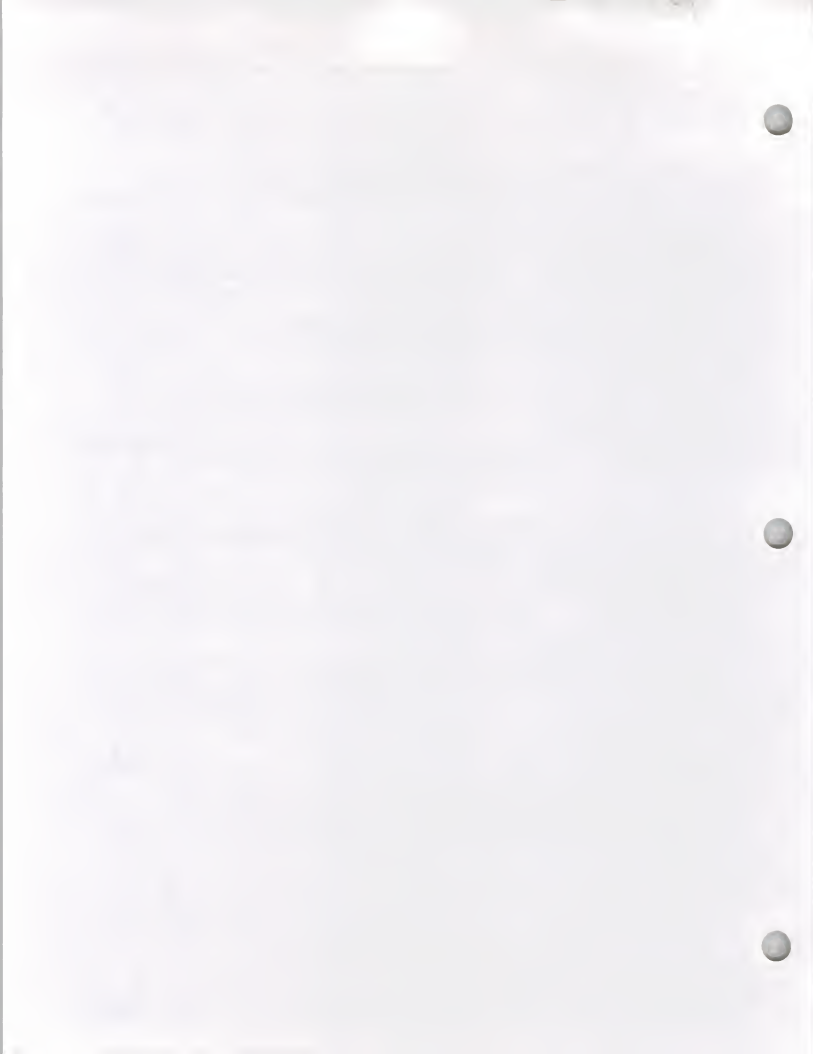
Assessment

RSA considers that its strengths include:

- Strong staff of mathematicians, cryptographers, and crypto-engineers
- Highly portable, time-tested cryptographic toolkits and implementations
- Focus on developer toolkits, including complete solutions consisting of Frameworks, algorithms, support, and consulting
- Strong name recognition and quality perception in the developer and customer communities

Challenges over the coming year include:

- Time to market with segment-specific toolkits for SET, S/MIME, and Secure Firewalls
- Successful entry into worldwide markets
- Successfully leveraging and complementing Security Dynamics' products and strategies



COMPANY PROFILE

RSA DATA SECURITY, INC.

10 Twin Dolphin Drive
Redwood City, CA 94065
(415) 595-8782

CEO and President, Jim Bidzos
Private Corporation
Total Employees: 12
Total Revenue, Fiscal Year End
12/31/88: \$2,000,000*

* INPUT estimate

The Company

RSA Data Security, Inc. (RSA), founded in 1982, designs, develops, and markets digital privacy and authentication systems based on the RSA Public Key technology.

- RSA technology was invented in 1977 at MIT by Professors Ronald Rivest, Adi Shamir, and Len Adleman who subsequently founded RSA.
- Ronald Rivest remains active as the Chief Technical Officer of the company. Adi Shamir and Len Adleman are Professors at the Weizman Institute in Tel Aviv, and USC respectively.

In January 1989, the algorithm driving RSA's products, RSA Public Key Cryptosystem, was endorsed by Internet as part of its proposed electronic mail security standard.

- RSA Public Key technology is patented by MIT, and RSA holds exclusive domestic rights.
- Internet is the world's largest electronic mail network.

RSA employs approximately 12 people.

Key Products and Services

RSA designs, develops, and markets digital privacy and authentication systems for OEMs and end users.

Products based on RSA's patented technology allow privacy and/or authentication of stored or transmitted data without secret-key sharing. The system works using distinct, paired keys. One is made public and the other is not. Encryption based on the public key can be undone only by the holder of the corresponding private key. In DES applications, the system can be used to exchange DES keys securely. For authentication, files "signed" using private keys are traceable to the signers and contain "tamper-detection seals."

MailSafe™, introduced in March 1986, is a data security package that allows users to ensure the privacy and authenticity of a file, as well as its integrity.

- These features are available through the following system functions:
 - Sign-appends a trailer to a file consisting of a code based on a sophisticated hashing algorithm, the sender's name, and the time the file was signed. Then, using the sender's private key, the trailer is encoded.
 - Verify-checks signed files by decrypting the signature trailer using the assumed sender's public key. If legitimate, the decryption will succeed. The hash is computed again and compared to the previous result from the trailer. If equal, the file is intact. If either the decryption or the comparison fails, then the user is alerted not to trust the file.
 - Seal-encrypts a file using the intended recipient's public key chosen from a public key directory. The file is rendered unreadable to anyone but the intended recipient.
 - Open-decrypts a file with the user's unique private key. If the file was encrypted using the user's public key, the file will be returned to its unencrypted state. Otherwise the file will remain unreadable.
- MailSafe runs on IBM PC and compatibles running MS-DOS 2.0 and up. License fee for mailsafe is \$350, with volume discounts available.
- MailSafe CL™, or MailSafe "command line," is a version of MailSafe that can be embedded in a batch file or application program allowing use of MailSafe functions from within an application.
- MailSafe E™ is a version of MailSafe that has been approved for export by the Department of State and the National Security Agency.

RSA Key Notary™ is designed to manage and authorize public keys for MailSafe users. The package includes a data base management system with reporting capabilities.

RSA Sign™, introduced in May 1989, performs the same function as MailSafe's sign facility. Each RSA Sign package includes a unique private key for the user. The user need not specify the

intended receiver of the file, as the public key code necessary to decrypt the file is attached to the file.

RSA Check™, introduced in May 1989, performs the same function as MailSafe's verify facility. RSA Check packages can check any file signed by RSA Sign regardless of the sender.

BSAFE™, introduced in July 1987, is a toolkit of cryptographic "C" language subroutines designed for incorporating digital authentication and privacy functions into a variety of systems. BSAFE is available for DOS and UNIX environments. BSAFE is marketed to OEMs and software developers.

RSA products are used to maintain data security and integrity in public and private networks, to maintain integrity of EDI documents, and for virus detection in programs transmitted over or used in a network.

RSA technology has been licensed for use in products by the following vendors: Digital Equipment Corporation, Lotus Development Corporation, Systems Center, Racal Milgo, and Motorola.

RSA markets its products both directly and through a distribution agreement with Fischer International Systems Corporation.

Industry Markets

RSA's products are used by government agencies and Fortune 1000 companies in aerospace, finance, insurance, manufacturing, and defense.

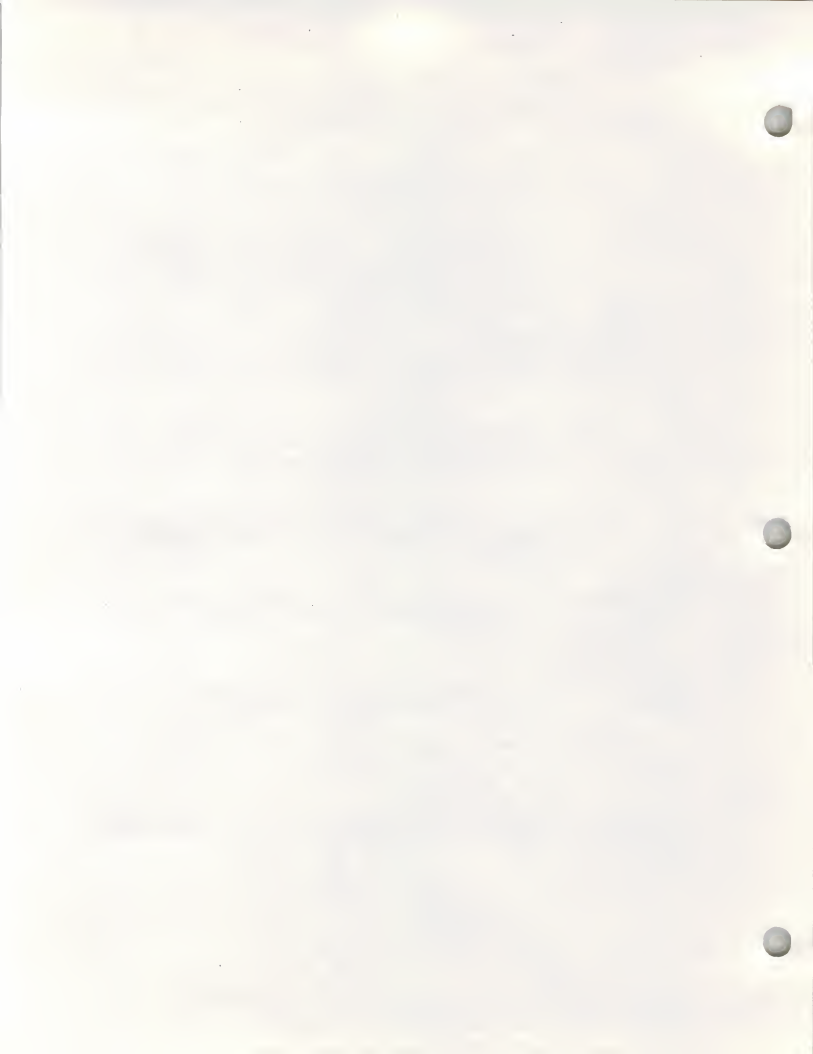
Geographic Markets

Most of RSA's products are distributed in the U.S., but the company claims to sell its products worldwide.

- RSA has a foreign distribution agreement with Computer Security Limited in the U.K.

Computer Hardware

RSA uses a number of IBM microcomputers and peripherals for customer support and development purposes.



COMPANY BRIEF

Cross Industry: Systems Software

Ryan-McFarland Corporation

609 Deep Valley Drive
Rolling Hills Estates, CA 90274
(213) 541-4828

CEO: Don Ryan, President
Private Company
Founded: 1970

Employees: 80 (12/85), 85 (11/86)
Revenue (FYE 12/31/86): \$7-10 million*

The Company: Ryan-McFarland Corporation provides systems software products and professional services to clients across industries

Sources of Revenue:

- Systems Software (85%)
- Professional Services (15%)

Key Products and Services:

- Systems Software (Utilizes most major manufacturers' hardware)
 - RM COBOL, introduced in 1978, is a COBOL compiler developed for use on most major manufacturers' computer systems. In 1985, the ANSI standard version of the product was introduced.
 - RM FORTRAN is a high performance FORTRAN compiler for Intel- and Motorola 68000-based computers.
 - RM INFO EXPRESS is a file server for MS-DOS- and PC-DOS-based computers.
 - RM BASIC is a BASIC compiler for those who want to migrate from IBM Systems 23 and 34 to PCs.
 - RM COS is a high performance commercial operating system developed for systems utilizing Motorola 68000-based hardware.
- Professional Services
 - Ryan-McFarland provides custom software development of languages, operating systems, and other systems software primarily for computer manufacturers and sophisticated end users.

Target Markets:

- Cross industry (100%)

*Company estimate

December 1986

Geographic Markets:

- U.S. (85%)
- Non-U.S. (15%)
- Direct sales from headquarters and London offices. The company also sells through distributors, including computer manufacturers and application developers

December 1986

COMPANY HIGHLIGHT

RYAN-MCFARLAND CORPORATION

609 Deep Valley Drive
Rolling Hills Estates, CA 90274
(213) 541-4828

Don Ryan, President
Private Corporation
Total Employees: 70
Total Revenue, Fiscal Year End
12/31/81: \$3,800,000

THE COMPANY

- Ryan-McFarland Corporation, founded in 1970, specializes in developing compilers and operating systems for mainframes, minicomputers, and micro-computers.
- The systems software technology used by Ryan-McFarland originated in Digitek Corporation, of which Mr. Ryan was a founder and Mr. McFarland an officer. Digitek's first compiler, FORTRAN for the SDS 920, was produced in 1961 and used as the basis for thirty more FORTRAN systems. Digitek went public in 1965 and proceeded to diversify through acquisition, gradually deemphasizing software projects. Digitek later sold the compiler models to Ryan-McFarland.
- Ryan-McFarland's 1981 revenue increased 65% to \$3.8 million. A five-year revenue summary follows:

RYAN-MCFARLAND CORPORATION FIVE-YEAR REVENUE SUMMARY (\$ thousands)

ITEM \ FISCAL YEAR	1981	1980	1979	1978	1977
Revenue	\$ 3,800	\$ 2,300	\$ 2,200	\$ 1,500	\$ 900
• Percent increase from previous year	65%	5%	47%	67%	50%

- Management anticipates fiscal 1982 revenue will reach \$5 million.

RYAN-MCFARLAND CORPORATION

- As of December 31, 1981, Ryan-McFarland had 65 employees. Currently there are 70 employees, segmented as follows:

Marketing/sales	5
Software development/ customer support	56
General and administrative	<u>9</u>
	70

- The competitors for custom development of operating systems and compilers are Computer Sciences Corporation, SofTech, and Intermetrics. Competition from vendors of packaged compilers comes from Microfocus and Microsoft.

KEY PRODUCTS AND SERVICES

- Ryan-McFarland derived approximately 65% of its 1981 revenue from professional services and 35% from packaged software sales.
- The company has developed a library of machine independent model programs from which individual systems are made. This is accomplished by defining and using simple machine independent languages called Programmed Operators (POPS).
- Ryan-McFarland has developed over 130 custom compilers, including BASIC, COBOL, PL/I, FORTRAN, and others, for a variety of hardware manufacturers and OEMs.
 - BASIC systems developed include Business BASIC for Control Data's Z80, and Scientific and Business BASIC for Texas Instruments' TI 990.
 - COBOL systems developed include ANSI 74 Level II for Data 100's Model 85 and IBM 370; ANSI 74 Level I+ for NCR's 8200; and ANSI 74 Level I+ for Texas Instruments' TI 990.
 - PL/I systems developed include Telephony (ESPL/I) for ITT's PDP-11, IBM 360, and TI 990.
 - FORTRAN systems developed include ANSI 68 for Texas Instruments' IBM 370 and TI 990; Level E, F for IBM's 360/44; Level G for IBM's 360; Fortran IV for DEC's PDP-6, GE's G/PAC Series, and Hughes Aircraft's IBM 7090; and ANSI 78 for Honeywell's Level 6.
 - Other systems developed include Assembler for ITT's IBM 370 and ITT 1602; Assembler/Simulator for Texas Instruments' TI 990 and TMS 9900; and CORAL for ITT's 3200 equipment.
- Ryan-McFarland currently offers three packaged software products. All products have a one-year warranty.
 - RM/COBOL, a language processor, was first introduced in 1979.

RYAN-MCFARLAND CORPORATION

- The system is available on most 8-bit and 16-bit processors including the IBM Personal Computer, Altos ACS 8600, Zilog S8000, and Tandy I/II/III, and runs under 16 operating systems.
- There are currently over 100,000 installations of RM/COBOL. Prices range from \$750 to \$1,250.
- RM/BASIC, first introduced in January 1982, is a language processor for the IBM 4300 Series marketed by IBM.
 - The product is a business oriented, interpretive BASIC compiler.
 - Management estimates there will be over 1,000 systems installed by the end of 1982. RM/BASIC is licensed for \$60 per month.
 - RM/BASIC will be available for 16-bit computers in 1983.
- RM/COS, an operating system, is available in two versions:
 - RM/COS, for Texas Instruments' 990, was introduced in 1981. Priced from \$800 to \$1,500, there are currently over 1,000 installations.
 - RM/COS, for Motorola 68000-based machines, was introduced in early 1982. First installations are scheduled for the summer of 1982, with prices ranging from \$1,500 to \$3,450.
- Ryan-McFarland is currently developing RM/FORTRAN, an ANSI-77 fully optimizing compiler.
 - The system will initially be available for Motorola 68000-based machines.
 - First installations are scheduled for the spring of 1983.

INDUSTRY MARKETS

- Approximately 95% of Ryan-McFarland's revenue is derived from sales to hardware manufacturers or OEMs and 5% from distributors.

GEOGRAPHIC MARKETS

- Eighty percent of the company's revenue comes from the U.S. and 20% from international sales, primarily in Europe and Japan.
- Ryan-McFarland has branch offices in Aptos (CA), Round Rock (TX), and London.

COMPUTER HARDWARE AND SOFTWARE

- Ryan-McFarland uses computers provided by the hardware manufacturers for software development. They include:
 - In Rolling Hills Estates:
 - 1 Texas Instruments 990.
 - 1 IBM 4331.
 - A number of microcomputers from various manufacturers including Tandy Models I, II, III, and I6, and IBM's Personal Computer.
 - In Round Rock:
 - 3 Texas Instruments 990s.
 - 3 M68000-based machines.
 - In Aptos:
 - Over 30 microcomputers from various manufacturers including Tandy, Televideo, DEC, Zilog, Altos, and Onyx.